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ABSTRACT

The longitudinal study was Phase 2 of a study designed to determine the relationship between selection techniques (used by the State of Colorado Civil Service Commission and the Career Service Authority of the city and county of Denver) and on-the-job performance in specified job classifications for personnel classified as (1) Negro, (2) Spanish-surname, or (3) White. Jobs included in the longitudinal analysis were (1) Hospital Attendant at Denver General Hospital; (2) Intermediate Clerk Typist; (3) Clerk Stenographer, Intermediate Clerk Stenographer, and Senior Clerk Stenographer; (4) Clerk Typist, Senior Clerk Typist, and Dictation Machine Operator (all in various State office settings); and (5) Resident Supervisor Trainee at Lookout Mountain School for Boys. Results are presented in graphical and statistical form and indicate no difference in job performance among the 3 ethnic groups. Also, on the paper-and-pencil tests used, the White groups scored consistently higher but mean oral interview ratings were comparable. In most cases where differences were found, there was considerable overlapping of score distributions. Evidence from the study indicates that the relationship between predictor variable and job performance varies from one ethnic group to another. A related document is RC 004 239. (DK)

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Final Technical Report on

DIFFERENTIAL PREDICTIVE VALIDITY OF SPECIFIED SELECTION TECHNIQUES WITHIN DESIGNATED SUBGROUPS OF APPLICANTS FOR CIVIL SERVICE POSITIONS

LONGITUDINAL PHASE

A Research Project Contracted to the Colorado Civil Rights Commission by the Equal Employment Opportunity Commission and Subcontracted by the Human Factors Research Laboratory, Colorado State University.

By

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Fort Collins, Colorado

May 22, 1969

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INTRODUCTION

This report contains the findings of the second of two phases of a project designed to determine the relationship between selection techniques used by the State of Colorado Civil Service Commission and the Career Service Authority of the City and County of Denver and on-the-job performance in specified job classifications when personnel are classified by (1) Negro, (2) Spanish-surname, and (3) White groups. The two phases of the project involved (1) the cross sectional testing of present employees and the concurrent assessment of their job performance, and (2) the longitudinal testing of job applicants with a subsequent follow-up on their on-the-job performance. The jobs involved in the longitudinal analysis included (1) Hospital Attendant at Denver General Hospital, (2) Intermediate Clerk Typist, (3) Clerk Stenographer, Intermediate Clerk Stenographer and Senior Clerk Stenographer, (4) Clerk Typist, Senior Clerk Typist and Dictation Machine Operator (all in various State office settings), and (5) Resident Supervisor Trainee at Lookout Mountain School for Boys.

The cross sectional phase was considered a preliminary phase of the project since (1) test scores were used in making the selection decisions to employ present personnel, thereby yielding a contaminated sample; (2) tests were administered to present employees on a voluntary basis and all employees were not included; (3) several tests were administered at a point in time other than that of application, making it necessary to assume that presently-obtained scores are comparable to those which would have been obtained at the time of application; (4) criterion ratings of job performances may have been subtly influenced by differential amounts of time on the job; and (5) some of the variation in job performance may have been produced by variations in training procedures to which incumbents were exposed. The longitudinal phase of the project was undertaken to rectify some of these shortcomings.

Although the nature of the project was described in detail in the report of findings from the cross sectional phase, the background for the project and the proposal on which it was based are repeated in the following paragraphs to allow this report to be considered independently from the first report.[1]

Background

When the Tower Amendment to the Civil Rights Act was passed, the legality of using employment tests was noted, but the responsibility of employers to demonstrate that their selection tests would not result in unfair discrimination associated with race, color, religion, sex or national origin was clearly implied:

> It shall not be...an unlawful employment practice for an employer to give and act upon the results of any professionally developed ability test provided that such test... is not...used to discriminate because of race, color, religion, sex, or national origin.
>
> Civil Rights Act, 1964, Section 703(h)

Fulfillment of the responsibility for demonstrating that his tests are not unfairly discriminatory requires that the employer know (1) how well individuals from various subgroups of the population can perform the job in question, (2) how well individuals from various subgroups of the population perform on the tests being used, and (3) the extent to which performance on the tests is predictive of performance on the job, both within and among the subgroups. Insight into the first issue can be gained only if individuals from all subgroups concerned are given the opportunity to perform the job. Insight into the second issue is readily gained by an examination of the performance on tests administered to members of the subgroups. Insight into the third issue can be gained only when test scores are correlated with job performance within subgroups--a condition predicated on the availability of job performance measures for reasonable numbers of subgroup members having held the job for an adequate length of time. The high interdependence of the first and third issues has made test discrimination research unfeasible in those situations where job applicants have been restricted or where the incumbents have been selected on the basis of test results.

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[1] Neidt, Charles O. *Report on Differen[illegible] Predictive Validity of Specified Selection Techniques within Designa[illegible]ubgroups of Applicants for Civil Service Positions*, Human Factors Rese[illegible]aboratory, Colorado State University, Fort Collins, Colorado, May[illegible] 1968.

General Methodology

The project reported herein was an outgrowth of a contract between the Equal Employment Opportunity Commission and the Colorado Civil Rights Commission. In the original application for financial assistance, the general objective of the project was stated as follows:[2]

> To investigate the conformity of the testing and hiring procedures used by governmental agencies in Colorado with the EEOC Guidelines on Employment Testing.
>
> The area in which intensive investigation is proposed is: Establishing whether or not the performance on the tests used in the selection of employees is related to on-the-job performance. If a relationship is found to exist, then to determine if the tests improperly discriminate against any ethnic group.

---

[2] Application for Financial Assistance, January 24, 1967, submitted by Colorado Civil Rights Commission, 306 State Services Building, 1525 Sherman Street, Denver, Colorado.

Upon approval of its application for financial assistance, the Colorado Civil Rights Commission then subcontracted with Colorado State University to collect and analyze appropriate data and report the results.[3] In the subcontract with Colorado State University, the following steps were identified:

Step 1. Job analysis to determine job activities and characteristics considered essential for the successful performance of each job.

Step 2. Identification of criteria of successful performance for each job including supervisory ratings, supervisory rankings, training scores, personnel criteria, and turnover.

Step 3. Correlation of existing test data with performance criteria.

Step 4. Identification of additional testing devices for administration to present employees. These devices were to include both verbal and low verbal tests, as well as personal history inventory information. It was anticipated that at least 200 present employees would be administered the tests.

Step 5. Validation of additional devices through the computation of means and standard deviations for specific ethnic groups as well as the computations of coefficients of correlation with one or more criteria within each ethnic group.

Step 6. Longitudinal cross validation of selection techniques with an uncontaminated sample. On the basis of evidence from the two approaches, cross sectional and longitudinal, a specific set of recommendations for reducing possible discrimination through the use of tests in employment by governmental agencies in Colorado was to be developed.

As indicated previously, the results of the cross sectional phase (Steps 1 through 6) of the project have been reported earlier. The results of the longitudinal phase (Step 7) of the project are reported herein.

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[3] Differential Predictive Validity of Specified Selection Techniques Within Designated Subgroups of Applicants, Proposal to the Colorado Civil Rights Commission, by Colorado State University, May 15, 1967.

LONGITUDINAL DATA COLLECTION

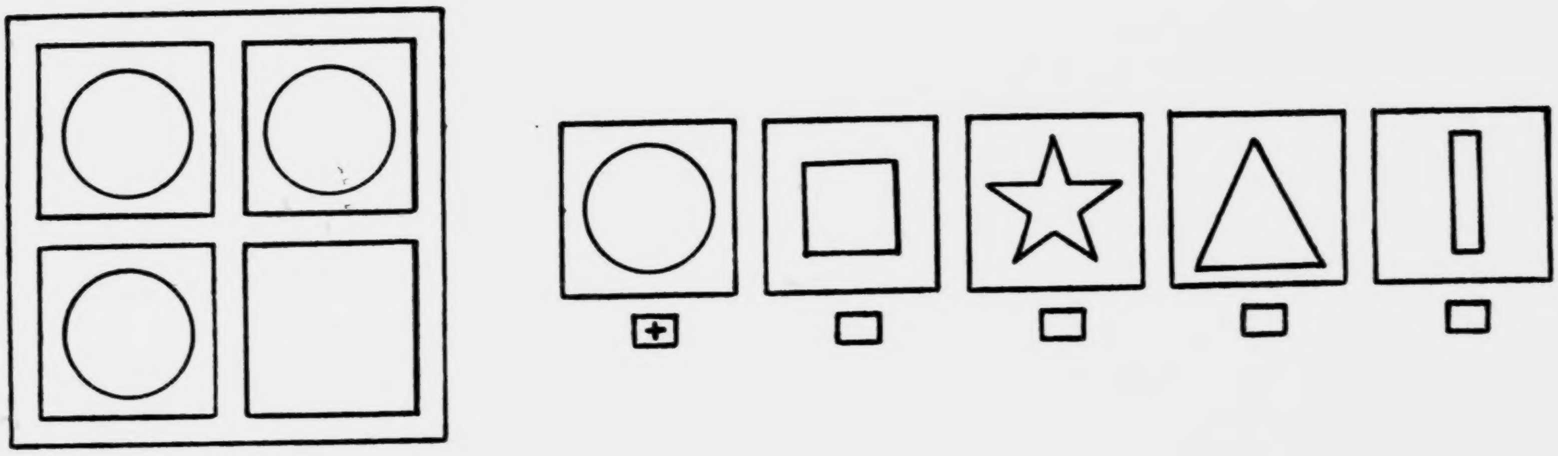
Successful implementation of the longitudinal phase of the present project required a procedure for identifying the ethnic group membership of each applicant as early in the selection process as possible. Initially, some consideration was given to conducting a preliminary screening interview with each applicant at which time the applicants would have been classified by ethnic group, but this was rejected as impractical. Instead, a form was designed on which each applicant was asked to indicate his ethnic group membership along with his age, sex and education. The form was accompanied by an explanation of the project and mild encouragement to participate in it as follows:

> The tests you are about to take are part of a study being conducted by the Equal Employment Opportunity Commission, the Colorado Civil Rights Commission and Colorado State University. The purpose of this project is to find out how well different groups score on employment tests regardless of race, creed, or color. We are therefore asking you to indicate your ethnic group on the attached sheet. This information will be used for research purposes only. These tests will not affect your ranking for this job. Although you are not required to take these tests or to give your ethnic background, you are urged to do so because by taking them you will be helping to eliminate discrimination in employment.
>
> James F. Reynolds, Director
> Colorado Civil Rights Commission
>
> Charles O. Neidt, Director
> Human Factors Research Laboratory
> Colorado State University

This form was administered along with the tests at the initial contact between the applicant and the employing agency. Throughout the year during which the data were collected, only one individual refused to indicate his ethnic group membership. In addition, no unfavorable comments were noted when the forms were distributed. Neither were there protests of any type lodged about the information with any civil rights agencies in the state. Apparently, asking applicants to state their ethnic group membership created no serious negative reactions.

In addition to obtaining ethnic group membership from all applicants, hospital attendant applicants, intermediate clerk typist applicants and resident supervisor trainee applicants also were administered a battery of three low verbal tests used in the cross sectional phase of the project. These tests were as follows.

Matrices Test: The Matrices Test is a 55-item test of general mental ability constructed by the Colorado State University Human Factors Research Laboratory requiring subjects to select one of five symbols which will complete a "matrix" as follows:



The test is in its third experimental edition and has been administered to a variety of ethnic groups in several settings. Retest reliability coefficients of .89 to .95 have been reported based on intervals of three weeks between administrations.

Symbol Checking, X-0, $-¢ Tests: To assess division of attention and visual discrimination under highly timed conditions, the symbol checking tests of the Low Verbal Series of the CSU Human Factors Research

Laboratory was used. This test requires four minutes for the X-0 section and two minutes for the $-¢ section. Odd-even reliabilities for the tests were found to be .94, .92 and .96 for the combined scores based on the previously mentioned sample. In this test the examinee is required to contrast groups of symbols for similarity and difference. The X-0 section contains 60 items and the $-¢ section contains 30 items.

Visual Memory: The visual memory test was also constructed specifically for the present project. This test involves looking at a group of twenty abstract designs for 30 seconds and then selecting those which were seen from among 72 symbols appearing in a booklet. Reliabilities of .92 and .87 were obtained for this test with the same sample as was mentioned previously. Abstract symbols rather than identifiable objects are included to reduce the influence of culture.

The total testing time for the three low verbal tests was 28 minutes. The hospital attendant applicants also were administered the SRA Non-Verbal Form, Form AH, which requires 10 minutes. The clerical applicants and the resident supervisor trainee applicants were given the written tests ordinarily used in the State Civil Service selection procedure. None of the test scores was used for the selection of hospital attendants, but the regular weighting and combining procedures followed by the Colorado Civil Service Commission were used for selecting all clerical personnel and resident supervisor trainees.

The low verbal tests were administered to groups of five to thirty applicants at each testing session by the psychometrists of the two agencies. Tests were distributed to the applicants in large envelopes and replaced in the envelopes as soon as each test in the battery was finished. The completed tests were then returned to Colorado State University in the envelopes for scoring and analysis. In most instances the low verbal tests were never handled by agency personnel in any way, thereby more nearly assuring freedom from contamination.

When the tests were received at Colorado State University they were scored and used as a basis for initiating the following record card:

Name ______________________________ No. _____

Age _______ Ethnic Group ______________________

Education ___________________________________

Employment Agency ____________________________

Test #1 X-O ______ $-¢ ______ Total __________

Test #3 Visual Memory ____________________

Test #6 Matrices ________ SRA NonVerbal ________

Hired: Yes_____ No_____

Copies of completed applications and interview ratings were then forwarded to CSU by each agency. For Denver General Hospital these materials were followed by monthly summaries of hiring actions and termination reports. In this manner it was possible to maintain a systematic accumulation of applicant data throughout the year.

During March and April, criterion data were obtained from the personnel shield of each person who had been employed during the previous nine months. The first set of criterion data collected consisted of the 90-day performance evaluations completed for the individual by his supervisor. Since so many employees were rated "standard," however, it was necessary to identify additional criteria of job performance for the study.

For employees of Denver General Hospital, the name of each person was typed on a small card and the cards were given to the Assistant Director of Nursing and the Director of Central Supply who met with the supervisors of the employees to arrange the cards according to the following directions:

> You have been given a stack of cards with the names of the (job title) you supervise printed on them. This stack of cards is to be used in indicating how well each (job title) performs his or her job. You are to stack the cards in order from best to poorest worker. In stacking the cards, consider _how well_ the person does his job and _how much_ he does. In other words, put your _best worker first_ and your _poorest worker last_. Two workers cannot tie--they must appear in rank order according to your best judgment.

After the initial ranking the cards were re-sorted on the basis of ability to perform the job duties, without regard to performance.

The ranks were then converted to five-point scales as follows:

5 - upper 10%
4 - next 20%
3 - middle 40%
2 - next 20%
1 - lower 10%

For all individuals employed through the State Civil Service, the name of each employee was typed on a performance evaluation sheet and sent to the supervisor of each individual through the local agency personnel representative with a memorandum of instructions accompanying the sheets. Employees were rated on four performance characteristics as follows:

Area 1 ABILITY TO LEARN: Consider speed in grasping explanations and retaining them.

1	2	3	4	5	6	7
Very slow, Poor memory	Requires a great deal of instruction		Average instruction required	Good ability to learn and retain information		Exceptionally fast, seldom forgets

Area 2 QUANTITY OF WORK: Consider volume of work produced. Disregard errors.

1	2	3	4	5	6	7
Very small amount	Below average amount		Reasonable amount	Good volume		Unusually large amount

Area 3 QUALITY OF WORK: Consider neatness, accuracy, disregard quantity.

1	2	3	4	5	6	7
Too many errors, unacceptable	Often unacceptable, frequent errors		Acceptable	Usually neat, occasional errors		Accurate and neat, very few errors

Area 4 KNOWLEDGE OF WORK: Consider knowledge through education, training, experience, etc.

1	2	3	4	5	6	7
Inadequate knowledge	Requires considerable help		Knows essentials	Performs without assistance		Well informed in all phases

Two different systems of obtaining performance evaluation were necessary since many of the supervisors in the State agencies supervised only one participant and card stacking or ranking would have been inappropriate.

To assess the reliability of the two sets of performance criterion measures, coefficients of stability and of equivalence were computed. These were found to be as follows:

Ranking

Group	Situation	Coefficient
Supervisors of 35 psychiatric technicians	3-week lapse	.87
Supervisors of 57 food service workers	2-week lapse	.89
Nursing supervisors for 32 aides	2-week lapse	.92
Nursing supervisors for 57 aides	2-week lapse	.86

Rating

Group	Situation	Coefficient
Supervisors of 50 clerical personnel	2-week lapse	.86
Quantity and Quality	One administration	.72
Quantity and Ability	" "	.75
Quantity and Knowledge	" "	.71
Quality and Ability	" "	.72
Quality and Knowledge	" "	.78
Ability and Knowledge	" "	.71

These coefficients parallel those obtained in Phase I of the present project. In general, the reliability of the criterion measures was considered satisfactory for purpose of the present study.

As information on each applicant was accumulated, it was filed in a manila folder for each individual. In some instances only the test data were available; in other instances test data and application information only were available; in still other instances, test data, application information, interview ratings, hiring dates and various performance data were accumulated in the folder.

To reflect the sequential nature of the steps in the selection process used by the two agencies, a chart of the employment system was developed. This chart was designed to indicate all stages of survival and attrition in the hiring processes and to classify the progress through the system made by each applicant. These charts form the graphs appearing in the Results section.

Whereas all applicants for the position of hospital attendant were tested throughout the longitudinal phase of the project (March, 1968 to January, 1969), the clerical and resident supervisor trainee applicants were tested on an irregular basis. This resulted from a shortage of psychometrists and from time limitations. Data were collected throughout the year from about 75% of the applicants for clerical and resident supervisor trainee positions.

At the close of the project (April 1, 1969), each individual who had participated in any phase was classified within the system. Altogether, 307 individuals comprised the applicant sample for the Career Service Authority of the City and County of Denver and 421 for the State of Colorado Civil Service Commission. Of these, 73 were eventually employed by Denver General Hospital and 101 by State agencies.

All data were then coded on data processing worksheets and keypunched and verified. The two code manuals are shown in the Appendix.

RESULTS

Since the present project involved data from two separate employing agencies, the results are presented separately for each agency. The data from the Career Service Authority of the City and County of Denver are discussed in the first section of this chapter and those from the State Civil Service are discussed in the second section.

CAREER SERVICE AUTHORITY - DENVER GENERAL HOSPITAL

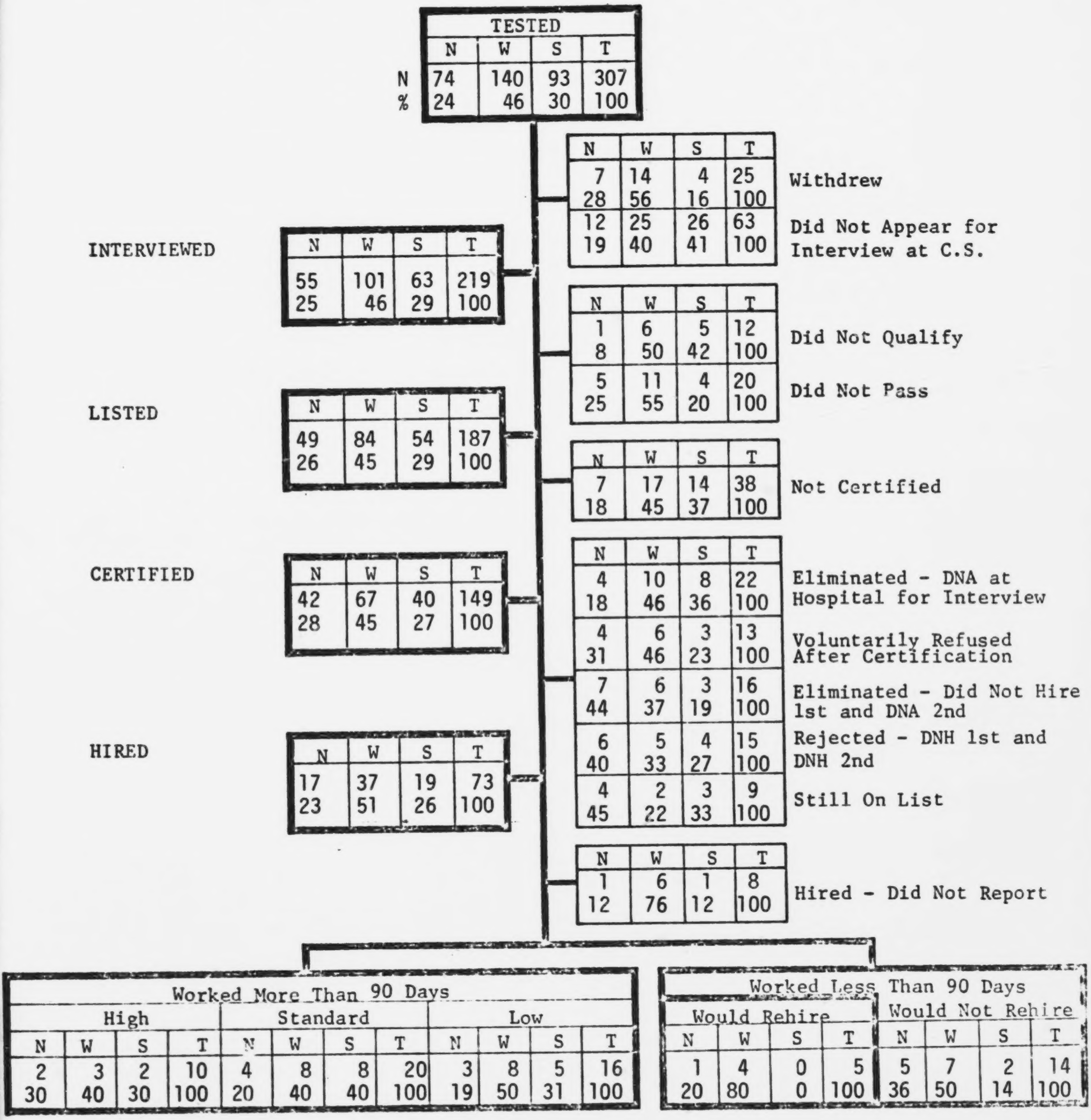
Four types of results were obtained from analyses of data from the Career Service Authority of the City and County of Denver. These results are as follows:

1. Selection Stage and Ethnic Group Data
2. Performance Data by Ethnic Group for Those Employed
3. Correlations Between Selection Characteristics and Performance Data by Ethnic Group
4. Frequency Distributions and Performance Data by Ethnic Group

Selection Stage by Ethnic Group

In Graph 1 are shown the numbers and percentages of applicants by ethnic group membership for the various selection stages defined by the Career Service Authority of the City and County of Denver. Of the 307 applicants who completed the test battery throughout the year, 73 or 24% were ultimately employed. Of those employed, 23% were Negro, 26% were White and 20% were Spanish-surname. Detailed examination of the stages at which applicants were eliminated indicates that a larger proportion of Spanish-surname individuals than would be expected on the basis of chance failed to appear for interview at Career Service, did not qualify

Attrition-Survival by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	74	140	93	307
%	24	46	30	100

	N	W	S	T
Withdrew	7 28	14 56	4 16	25 100
Did Not Appear for Interview at C.S.	12 19	25 40	26 41	63 100

INTERVIEWED

N	W	S	T
55	101	63	219
25	46	29	100

	N	W	S	T
Did Not Qualify	1 8	6 50	5 42	12 100
Did Not Pass	5 25	11 55	4 20	20 100

LISTED

N	W	S	T
49	84	54	187
26	45	29	100

	N	W	S	T
Not Certified	7 18	17 45	14 37	38 100

CERTIFIED

N	W	S	T
42	67	40	149
28	45	27	100

	N	W	S	T
Eliminated - DNA at Hospital for Interview	4 18	10 46	8 36	22 100
Voluntarily Refused After Certification	4 31	6 46	3 23	13 100
Eliminated - Did Not Hire 1st and DNA 2nd	7 44	6 37	3 19	16 100
Rejected - DNH 1st and DNH 2nd	6 40	5 33	4 27	15 100
Still On List	4 45	2 22	3 33	9 100

HIRED

N	W	S	T
17	37	19	73
23	51	26	100

	N	W	S	T
Hired - Did Not Report	1 12	6 76	1 12	8 100

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
2	3	2	10	4	8	8	20	3	8	5	16
30	40	30	100	20	40	40	100	19	50	31	100

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1	4	0	5	5	7	2	14
20	80	0	100	36	50	14	100

Graph 1. Attrition Survival by Selection Stage and Ethnic Group

or were not certified. In addition, a slightly higher percentage than chance expectancy did not appear at the hospital for interview. Conversely, relatively fewer than expectancy were eliminated because of failure to return to the hospital for a second interview after not having been hired on the basis of the first interview.

In contrast to the Spanish-surname applicants, relatively fewer Negro applicants were not certified and were eliminated because of failure to appear for interview at the hospital. (Stated in opposite terms from the graph entries, more were certified and more appeared at the hospital for interview.) However, proportionately more Negroes did not return for a second interview after not being hired on the basis of the first interview than would be expected, and more were rejected after two interviews than would be expected in terms of the relative proportions of Negroes who were tested initially.

For White applicants, a larger proportion withdrew before Career Service interviews, did not qualify or did not pass, and did not report for work than would be expected. Relatively fewer Whites than expected failed to appear for Career Service interviewing, did not appear for the initial or second interview at the hospital, or were still on the list at the close of the study.

It should be noted that the numbers involved in the "Causes of Elimination" stages of the selection process (right hand side of Graph 1) are very small and that results can be considered as indicative of trends only. When the small numbers are taken into account, however, it seems reasonable to conclude that there is no evidence of deliberate discrimination, but that the selection procedures may be more appropriate for Whites than for either minority group. Specifically, the time delays between stages seem to have an adverse effect on Spanish-surname personnel, and the interviews may affect the Negroes adversely. The latter is particularly well illustrated in the Negro percentage (44%) of the applicants who did not appear for a second interview at Denver General Hospital. It is hypothesized that the Negroes may have been discouraged by not being offered a job on the basis of first interview and therefore did not return for the second interview, even though they were entitled to two such interviews. The implications of these findings will be discussed in detail in a later chapter.

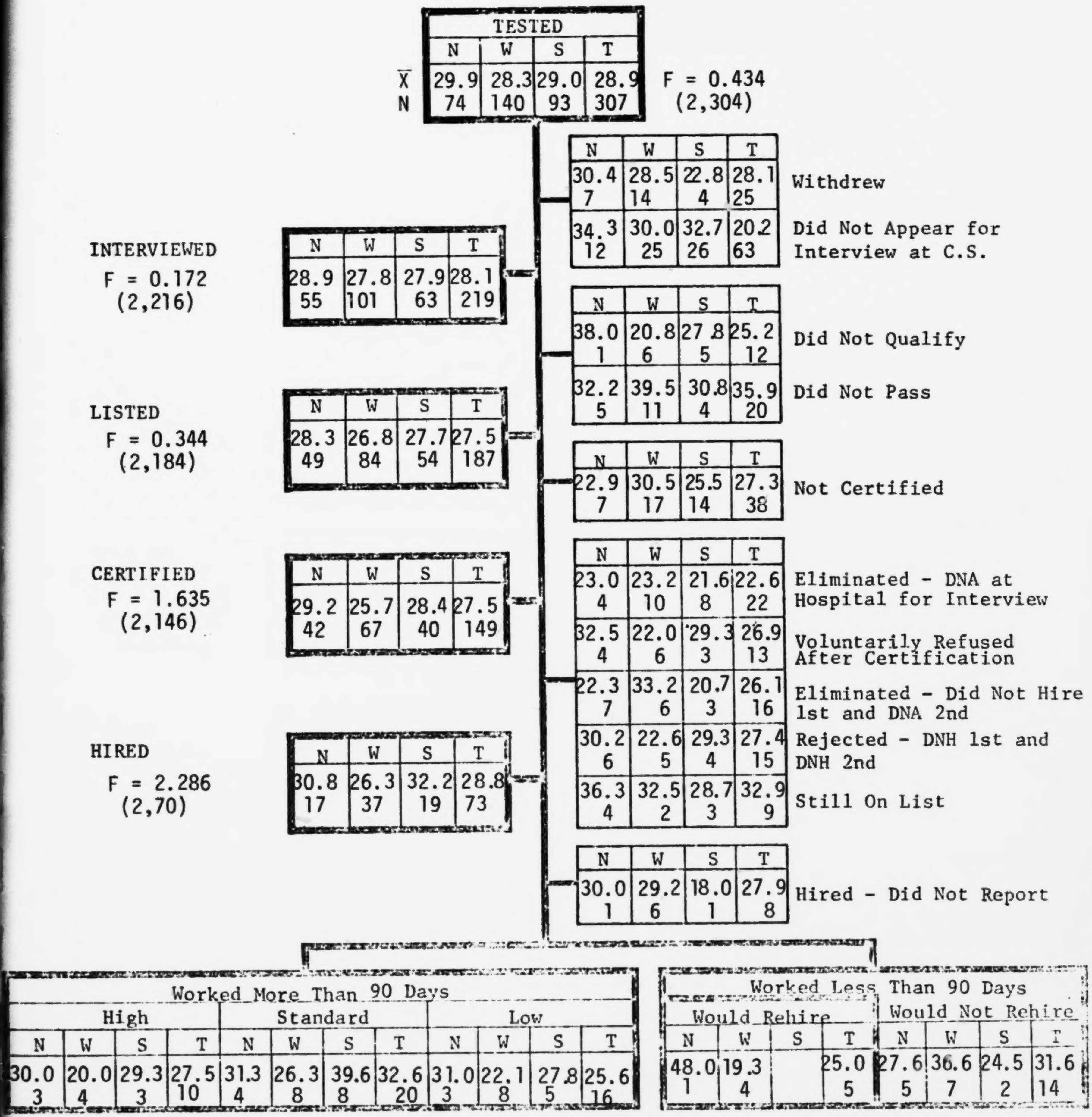
Although all the graphs describing characteristics of applicants by selection stage and by ethnic group contain reference to the performance of those employed (last line of graph), this information is considered in much greater detail in a subsequent section of this chapter. No specific interpretation will be made of the performance results in this section. Rather, the performance groupings are presented here for general information only and will be discussed in detail later.

In Graph 2 the ages of applicants by selection stage and ethnic group membership are shown. The F-values shown beside each selection stage represent indices of the significance of the difference among the three mean age values at each stage. In all instances, the differences among the three mean ages are not statistically significant.

In reviewing the various conditions for elimination from further consideration, a younger mean age for those failing to appear at the hospital for initial interview can be noted.

Differences among educational levels of the three ethnic groups by selection stage are shown in Graph 3. Whereas the White applicants in the "Tested" group and in most other stages reflected a higher

Age by Selection Stage and Ethnic Group



TESTED F = 0.434 (2,304)

	N	W	S	T
X̄	29.9	28.3	29.0	28.9
N	74	140	93	307

INTERVIEWED F = 0.172 (2,216)

N	W	S	T
28.9 55	27.8 101	27.9 63	28.1 219

LISTED F = 0.344 (2,184)

N	W	S	T
28.3 49	26.8 84	27.7 54	27.5 187

CERTIFIED F = 1.635 (2,146)

N	W	S	T
29.2 42	25.7 67	28.4 40	27.5 149

HIRED F = 2.286 (2,70)

N	W	S	T
30.8 17	26.3 37	32.2 19	28.8 73

N	W	S	T	
30.4 7	28.5 14	22.8 4	28.1 25	Withdrew
34.3 12	30.0 25	32.7 26	20.2 63	Did Not Appear for Interview at C.S.

N	W	S	T	
38.0 1	20.8 6	27.8 5	25.2 12	Did Not Qualify
32.2 5	39.5 11	30.8 4	35.9 20	Did Not Pass

N	W	S	T	
22.9 7	30.5 17	25.5 14	27.3 38	Not Certified

N	W	S	T	
23.0 4	23.2 10	21.6 8	22.6 22	Eliminated - DNA at Hospital for Interview
32.5 4	22.0 6	29.3 3	26.9 13	Voluntarily Refused After Certification
22.3 7	33.2 6	20.7 3	26.1 16	Eliminated - Did Not Hire 1st and DNA 2nd
30.2 6	22.6 5	29.3 4	27.4 15	Rejected - DNH 1st and DNH 2nd
36.3 4	32.5 2	28.7 3	32.9 9	Still On List

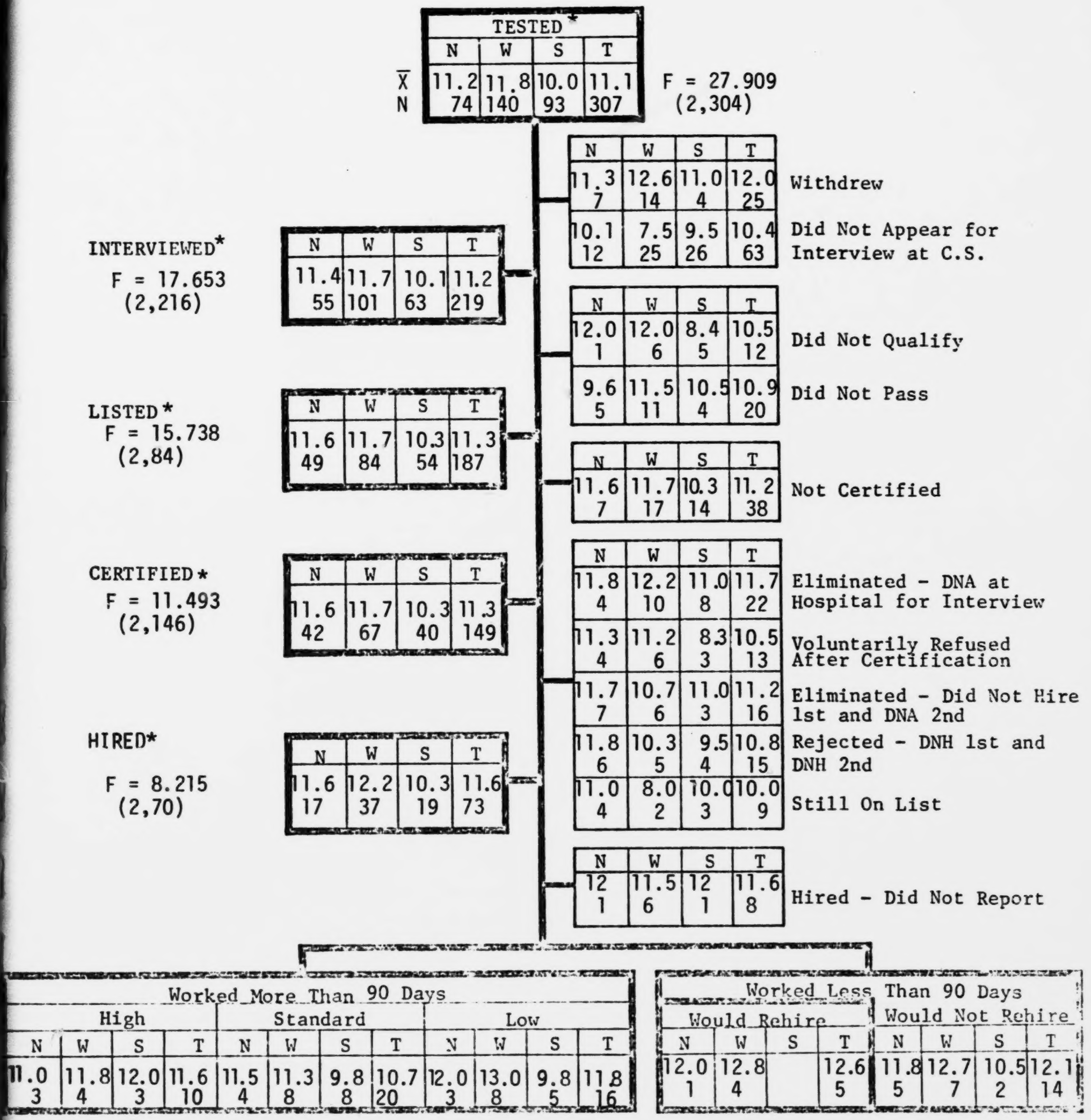
N	W	S	T	
30.0 1	29.2 6	18.0 1	27.9 8	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
30.0 3	20.0 4	29.3 3	27.5 10	31.3 4	26.3 8	39.6 8	32.6 20	31.0 3	22.1 8	27.8 5	25.6 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
48.0 1	19.3 4		25.0 5	27.6 5	36.6 7	24.5 2	31.6 14

Graph 2. Age by Selection Stage and Ethnic Group

Education by Selection Stage and Ethnic Group



TESTED*

	N	W	S	T
X̄	11.2	11.8	10.0	11.1
N	74	140	93	307

F = 27.909
(2,304)

INTERVIEWED*
F = 17.653
(2,216)

	N	W	S	T
X̄	11.4	11.7	10.1	11.2
N	55	101	63	219

LISTED*
F = 15.738
(2,84)

	N	W	S	T
X̄	11.6	11.7	10.3	11.3
N	49	84	54	187

CERTIFIED*
F = 11.493
(2,146)

	N	W	S	T
X̄	11.6	11.7	10.3	11.3
N	42	67	40	149

HIRED*
F = 8.215
(2,70)

	N	W	S	T
X̄	11.6	12.2	10.3	11.6
N	17	37	19	73

	N	W	S	T	
X̄	11.3	12.6	11.0	12.0	Withdrew
N	7	14	4	25	
X̄	10.1	7.5	9.5	10.4	Did Not Appear for Interview at C.S.
N	12	25	26	63	

	N	W	S	T	
X̄	12.0	12.0	8.4	10.5	Did Not Qualify
N	1	6	5	12	
X̄	9.6	11.5	10.5	10.9	Did Not Pass
N	5	11	4	20	

	N	W	S	T	
X̄	11.6	11.7	10.3	11. 2	Not Certified
N	7	17	14	38	

	N	W	S	T	
X̄	11.8	12.2	11.0	11.7	Eliminated - DNA at Hospital for Interview
N	4	10	8	22	
X̄	11.3	11.2	8.3	10.5	Voluntarily Refused After Certification
N	4	6	3	13	
X̄	11.7	10.7	11.0	11.2	Eliminated - Did Not Hire 1st and DNA 2nd
N	7	6	3	16	
X̄	11.8	10.3	9.5	10.8	Rejected - DNH 1st and DNH 2nd
N	6	5	4	15	
X̄	11.0	8.0	10.0	10.0	Still On List
N	4	2	3	9	

	N	W	S	T	
X̄	12	11.5	12	11.6	Hired - Did Not Report
N	1	6	1	8	

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
11.0	11.8	12.0	11.6	11.5	11.3	9.8	10.7	12.0	13.0	9.8	11.8
3	4	3	10	4	8	8	20	3	8	5	16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
12.0	12.8		12.6	11.8	12.7	10.5	12.1
1	4		5	5	7	2	14

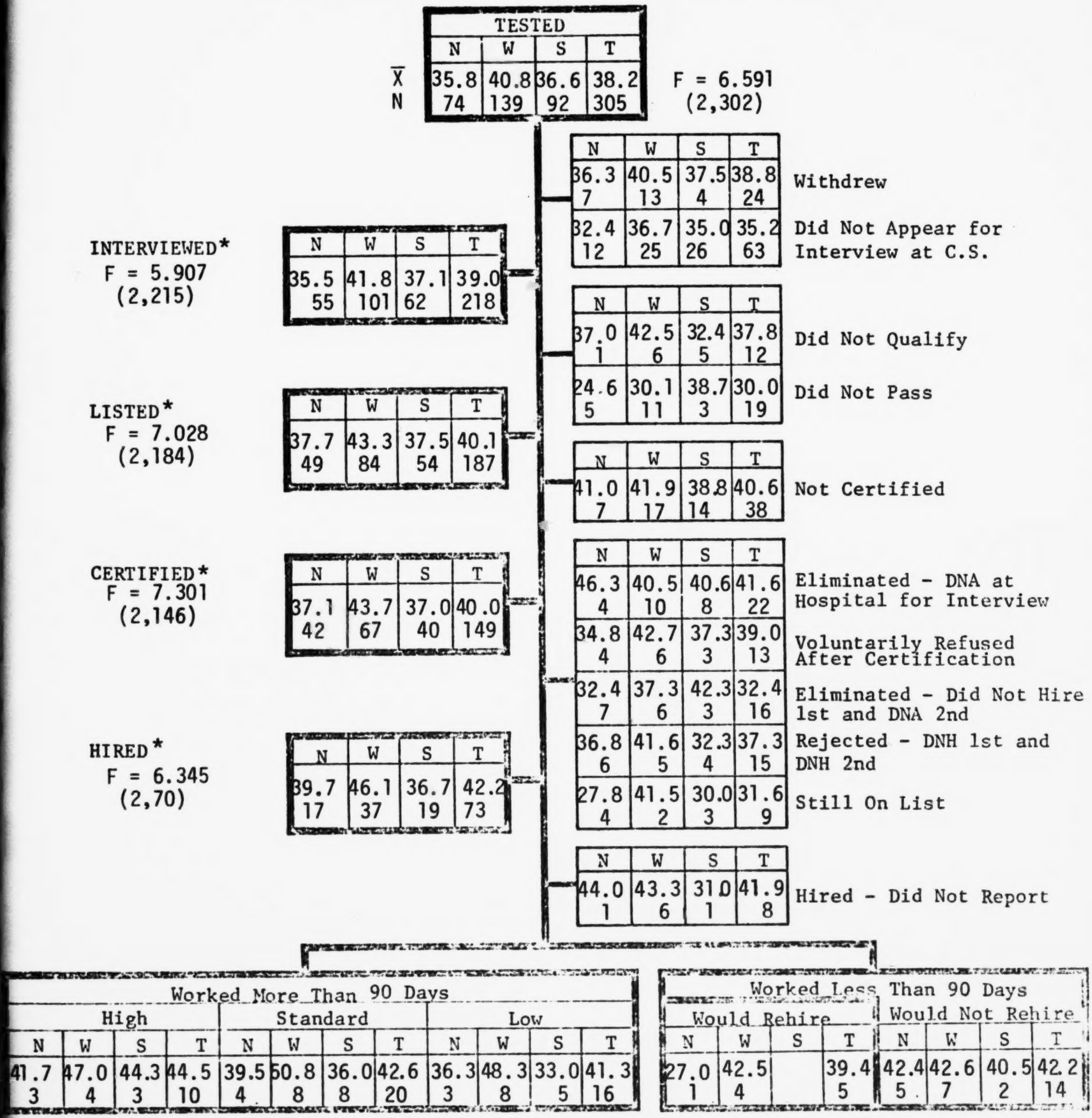
*Significant at .05 level or beyond

Graph 3. Education by Selection Stage and Ethnic Group educational level, some exceptions can be noted. The Whites not appearing for interview at Career Service, not hired on the basis of the first interview and not appearing for the second interview, and still on the list had completed fewer years of schooling, on the average, than members of the two minority groups.

It should be noted that the educational requirement for the hospital attendant position was eliminated half-way through the experimental year, thus making the educational background of the applicants more variable during the later months of the project. An analysis of the mean educational level by month reflects a drop of one and one-half years for the Spanish-surname mean level and of one year for the Negroes and Whites. As will be seen later, the elimination of the educational requirement apparently had no adverse effect on the performance of those hired.

In Graphs 4 through 9 are shown the mean score on various selection tests by selection stage and ethnic group. It will be recalled that the test scores were not used in any manner for selection purposes. Nevertheless, the applicants ultimately selected within ethnic groups almost universally had higher scores than the original applicant pool. In addition, the differences among the mean scores for the three ethnic groups tended to be smaller for those hired than the difference among the groups originally tested. This is indicated by the decrease in size of F-values between the tested comparisons and the hired comparisons. Apparently the interview ratings and the selection procedure itself yielded more homogeneous groups as selection proceeded. Detailed comment about the use of tests will be made later, but suffice it to say at this time that the use of tests would have eliminated many of those from

X-0 Score by Selection Stage and Ethnic Group



TESTED — F = 6.591 (2,302)

	N	W	S	T
$\overline{X}$	35.8	40.8	36.6	38.2
N	74	139	92	305

	N	W	S	T
Withdrew	36.3 7	40.5 13	37.5 4	38.8 24
Did Not Appear for Interview at C.S.	32.4 12	36.7 25	35.0 26	35.2 63

INTERVIEWED* — F = 5.907 (2,215)

N	W	S	T
35.5 55	41.8 101	37.1 62	39.0 218

	N	W	S	T
Did Not Qualify	37.0 1	42.5 6	32.4 5	37.8 12
Did Not Pass	24.6 5	30.1 11	38.7 3	30.0 19

LISTED* — F = 7.028 (2,184)

N	W	S	T
37.7 49	43.3 84	37.5 54	40.1 187

	N	W	S	T
Not Certified	41.0 7	41.9 17	38.8 14	40.6 38

CERTIFIED* — F = 7.301 (2,146)

N	W	S	T
37.1 42	43.7 67	37.0 40	40.0 149

	N	W	S	T
Eliminated - DNA at Hospital for Interview	46.3 4	40.5 10	40.6 8	41.6 22
Voluntarily Refused After Certification	34.8 4	42.7 6	37.3 3	39.0 13
Eliminated - Did Not Hire 1st and DNA 2nd	32.4 7	37.3 6	42.3 3	32.4 16
Rejected - DNH 1st and DNH 2nd	36.8 6	41.6 5	32.3 4	37.3 15
Still On List	27.8 4	41.5 2	30.0 3	31.6 9

HIRED* — F = 6.345 (2,70)

N	W	S	T
39.7 17	46.1 37	36.7 19	42.2 73

	N	W	S	T
Hired - Did Not Report	44.0 1	43.3 6	31.0 1	41.9 8

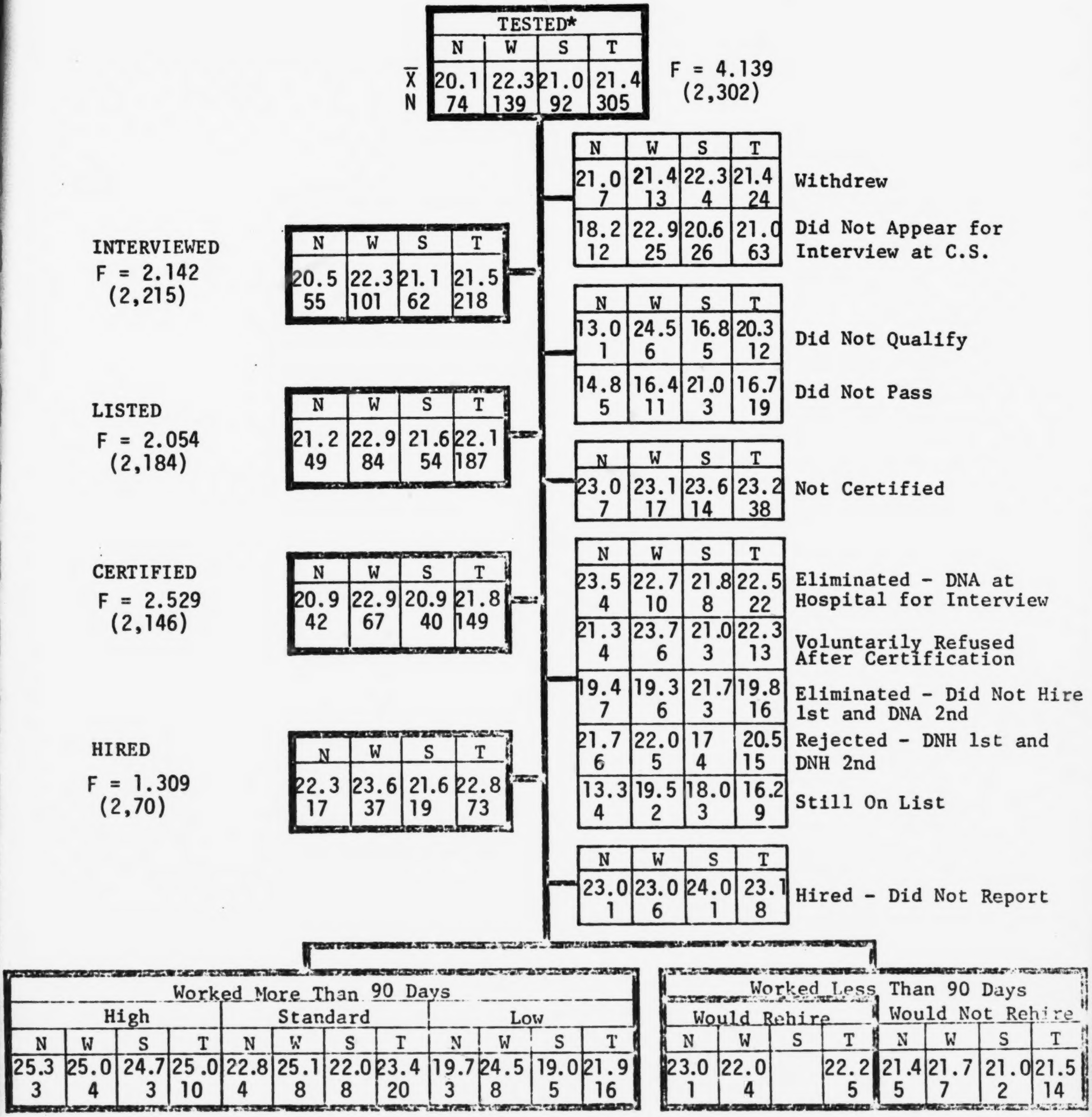
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
41.7 3	47.0 4	44.3 3	44.5 10	39.5 4	50.8 8	36.0 8	42.6 20	36.3 3	48.3 8	33.0 5	41.3 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
27.0 1	42.5 4		39.4 5	42.4 5	42.6 7	40.5 2	42.2 14

*Significant at .05 level or beyond

Graph 4. X-0 Score by Selection Stage and Ethnic Group

$-¢ Score by Selection Stage and Ethnic Group



TESTED*

	N	W	S	T
$\bar{X}$	20.1	22.3	21.0	21.4
N	74	139	92	305

F = 4.139
(2,302)

		N	W	S	T
Withdrew	$\bar{X}$	21.0	21.4	22.3	21.4
	N	7	13	4	24
Did Not Appear for Interview at C.S.	$\bar{X}$	18.2	22.9	20.6	21.0
	N	12	25	26	63

INTERVIEWED
F = 2.142
(2,215)

N	W	S	T
20.5	22.3	21.1	21.5
55	101	62	218

		N	W	S	T
Did Not Qualify	$\bar{X}$	13.0	24.5	16.8	20.3
	N	1	6	5	12
Did Not Pass	$\bar{X}$	14.8	16.4	21.0	16.7
	N	5	11	3	19

LISTED
F = 2.054
(2,184)

N	W	S	T
21.2	22.9	21.6	22.1
49	84	54	187

		N	W	S	T
Not Certified	$\bar{X}$	23.0	23.1	23.6	23.2
	N	7	17	14	38

CERTIFIED
F = 2.529
(2,146)

N	W	S	T
20.9	22.9	20.9	21.8
42	67	40	149

		N	W	S	T
Eliminated - DNA at Hospital for Interview	$\bar{X}$	23.5	22.7	21.8	22.5
	N	4	10	8	22
Voluntarily Refused After Certification	$\bar{X}$	21.3	23.7	21.0	22.3
	N	4	6	3	13
Eliminated - Did Not Hire 1st and DNA 2nd	$\bar{X}$	19.4	19.3	21.7	19.8
	N	7	6	3	16
Rejected - DNH 1st and DNH 2nd	$\bar{X}$	21.7	22.0	17	20.5
	N	6	5	4	15
Still On List	$\bar{X}$	13.3	19.5	18.0	16.2
	N	4	2	3	9

HIRED
F = 1.309
(2,70)

N	W	S	T
22.3	23.6	21.6	22.8
17	37	19	73

		N	W	S	T
Hired - Did Not Report	$\bar{X}$	23.0	23.0	24.0	23.1
	N	1	6	1	8

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
25.3	25.0	24.7	25.0	22.8	25.1	22.0	23.4	19.7	24.5	19.0	21.9
3	4	3	10	4	8	8	20	3	8	5	16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
23.0	22.0		22.2	21.4	21.7	21.0	21.5
1	4		5	5	7	2	14

*Significant at .05 level or beyond

Graph 5. $-¢ Score by Selection Stage and Ethnic Group

X-0 $-¢ Score by Selection Stage and Ethnic Group

TESTED*

	N	W	S	T
$\bar{X}$	55.7	62.8	57.6	59.5
N	74	139	92	305

F = 6.252
(2,302)

	N	W	S	T
Withdrew	57.3 7	51.9 13	59.8 4	60.2 24
Did Not Appear for Interview at C.S.	51.3 12	59.8 25	55.8 26	56.5 63'

INTERVIEWED *
F = 4.776
(2,215)

N	W	S	T
56.5 55	63.6 101	58.2 62	60.3 218

	N	W	S	T
Did Not Qualify	50.0 1	67.0 6	49.2 5	58.2 12
Did Not Pass	40.4 5	46.5 11	59.7 3	47.0 19

LISTED *
F = 5.485
(2,184)

N	W	S	T
58.2 49	65.6 84	59.0 54	61.8 187

	N	W	S	T
Not Certified	64.0 7	64.9 17	62.3 14	63.8 38

CERTIFIED *
F = 5.927
(2,146)

N	W	S	T
57.3 42	65.8 67	57.9 40	61.2 149

	N	W	S	T
Eliminated - DNA at Hospital for Interview	62.3 4	61.2 10	62.4 8	61.8 22
Voluntarily Refused After Certification	56.0 4	66.3 6	57.7 3	61.2 13
Eliminated - Did Not Hire 1st and DNA 2nd	51.9 7	56.7 6	64 3	55.9 16
Rejected - DNH 1st and DNH 2nd	58.5 6	63.8 5	49.3 4	57.8 15
Still On List	41.0 4	61.0 2	48.0 3	47.8 9

HIRED *
F = 4.682
(2,70)

N	W	S	T
62.0 17	69.0 37	58.4 19	64.6 73

	N	W	S	T
Hired - Did Not Report	67.0 1	66.3 6	55.0 1	65.0 8

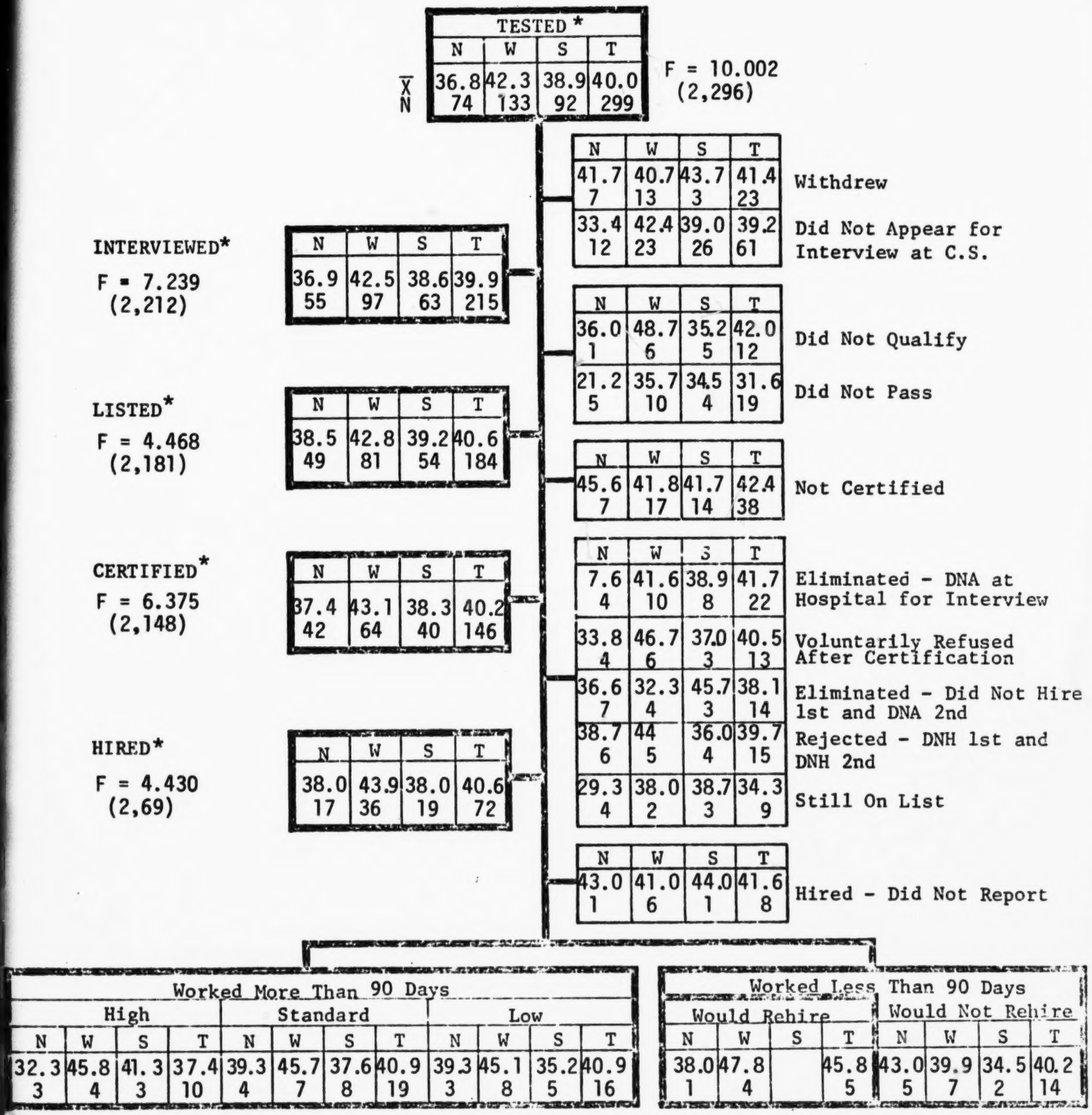
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
67.0 3	71.8 4	69.0 3	69.5 10	62.3 4	75.9 8	58.0 8	66.0 20	56.0 3	69.0 8	52.0 5	61.3 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
50.0 1	64.5 4		61.6 5	63.8 5	64.3 7	61.5 2	63.7 14

*Significant at .05 level or beyond

Graph 6. X-0 $-¢ Score by Selection Stage and Ethnic Group

SRA Non Verbal Score by Selection Stage
and Ethnic Group



TESTED *	N	W	S	T
$\overline{X}$	36.8	42.3	38.9	40.0
N	74	133	92	299

F = 10.002
(2,296)

	N	W	S	T
Withdrew	41.7 7	40.7 13	43.7 3	41.4 23
Did Not Appear for Interview at C.S.	33.4 12	42.4 23	39.0 26	39.2 61

INTERVIEWED*
F = 7.239
(2,212)

N	W	S	T
36.9 55	42.5 97	38.6 63	39.9 215

	N	W	S	T
Did Not Qualify	36.0 1	48.7 6	35.2 5	42.0 12
Did Not Pass	21.2 5	35.7 10	34.5 4	31.6 19

LISTED*
F = 4.468
(2,181)

N	W	S	T
38.5 49	42.8 81	39.2 54	40.6 184

	N	W	S	T
Not Certified	45.6 7	41.8 17	41.7 14	42.4 38

CERTIFIED*
F = 6.375
(2,148)

N	W	S	T
37.4 42	43.1 64	38.3 40	40.2 146

	N	W	S	T
Eliminated - DNA at Hospital for Interview	7.6 4	41.6 10	38.9 8	41.7 22
Voluntarily Refused After Certification	33.8 4	46.7 6	37.0 3	40.5 13
Eliminated - Did Not Hire 1st and DNA 2nd	36.6 7	32.3 4	45.7 3	38.1 14
Rejected - DNH 1st and DNH 2nd	38.7 6	44 5	36.0 4	39.7 15
Still On List	29.3 4	38.0 2	38.7 3	34.3 9

HIRED*
F = 4.430
(2,69)

N	W	S	T
38.0 17	43.9 36	38.0 19	40.6 72

	N	W	S	T
Hired - Did Not Report	43.0 1	41.0 6	44.0 1	41.6 8

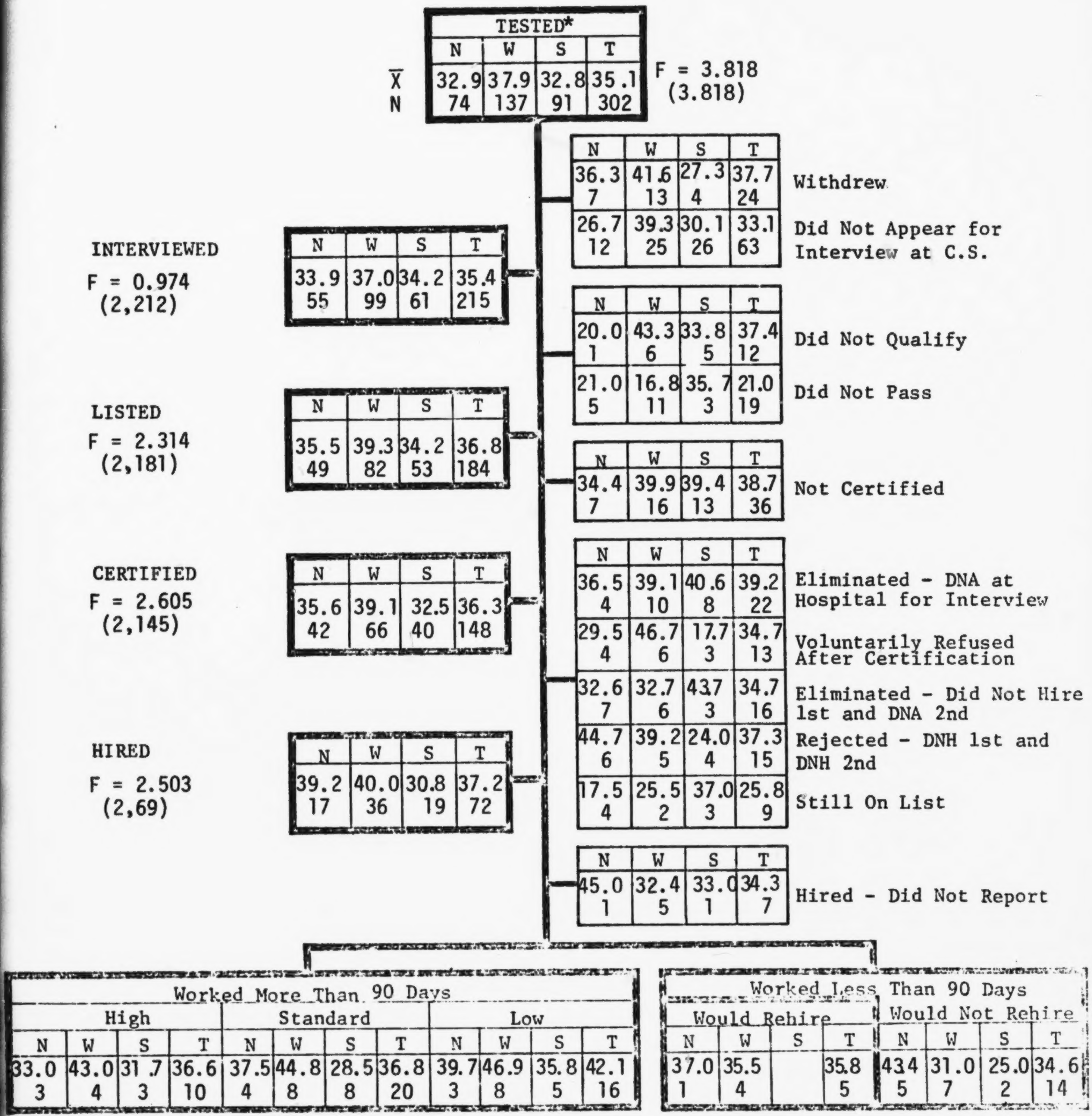
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
32.3 3	45.8 4	41.3 3	37.4 10	39.3 4	45.7 7	37.6 8	40.9 19	39.3 3	45.1 8	35.2 5	40.9 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
38.0 1	47.8 4		45.8 5	43.0 5	39.9 7	34.5 2	40.2 14

*Significant at .05 level or beyond

Graph 7. SRA Non Verbal Score by Selection Stage and Ethnic Group

Visual Memory Score by Selection Stage and Ethnic Group



TESTED*, F = 3.818 (3.818)

	N	W	S	T
X̄	32.9	37.9	32.8	35.1
N	74	137	91	302

INTERVIEWED, F = 0.974 (2,212)

N	W	S	T
33.9 55	37.0 99	34.2 61	35.4 215

	N	W	S	T
Withdrew	36.3 7	41.6 13	27.3 4	37.7 24
Did Not Appear for Interview at C.S.	26.7 12	39.3 25	30.1 26	33.1 63

LISTED, F = 2.314 (2,181)

N	W	S	T
35.5 49	39.3 82	34.2 53	36.8 184

	N	W	S	T
Did Not Qualify	20.0 1	43.3 6	33.8 5	37.4 12
Did Not Pass	21.0 5	16.8 11	35.7 3	21.0 19

CERTIFIED, F = 2.605 (2,145)

N	W	S	T
35.6 42	39.1 66	32.5 40	36.3 148

	N	W	S	T
Not Certified	34.4 7	39.9 16	39.4 13	38.7 36

HIRED, F = 2.503 (2,69)

N	W	S	T
39.2 17	40.0 36	30.8 19	37.2 72

	N	W	S	T
Eliminated - DNA at Hospital for Interview	36.5 4	39.1 10	40.6 8	39.2 22
Voluntarily Refused After Certification	29.5 4	46.7 6	17.7 3	34.7 13
Eliminated - Did Not Hire 1st and DNA 2nd	32.6 7	32.7 6	43.7 3	34.7 16
Rejected - DNH 1st and DNH 2nd	44.7 6	39.2 5	24.0 4	37.3 15
Still On List	17.5 4	25.5 2	37.0 3	25.8 9

	N	W	S	T
Hired - Did Not Report	45.0 1	32.4 5	33.0 1	34.3 7

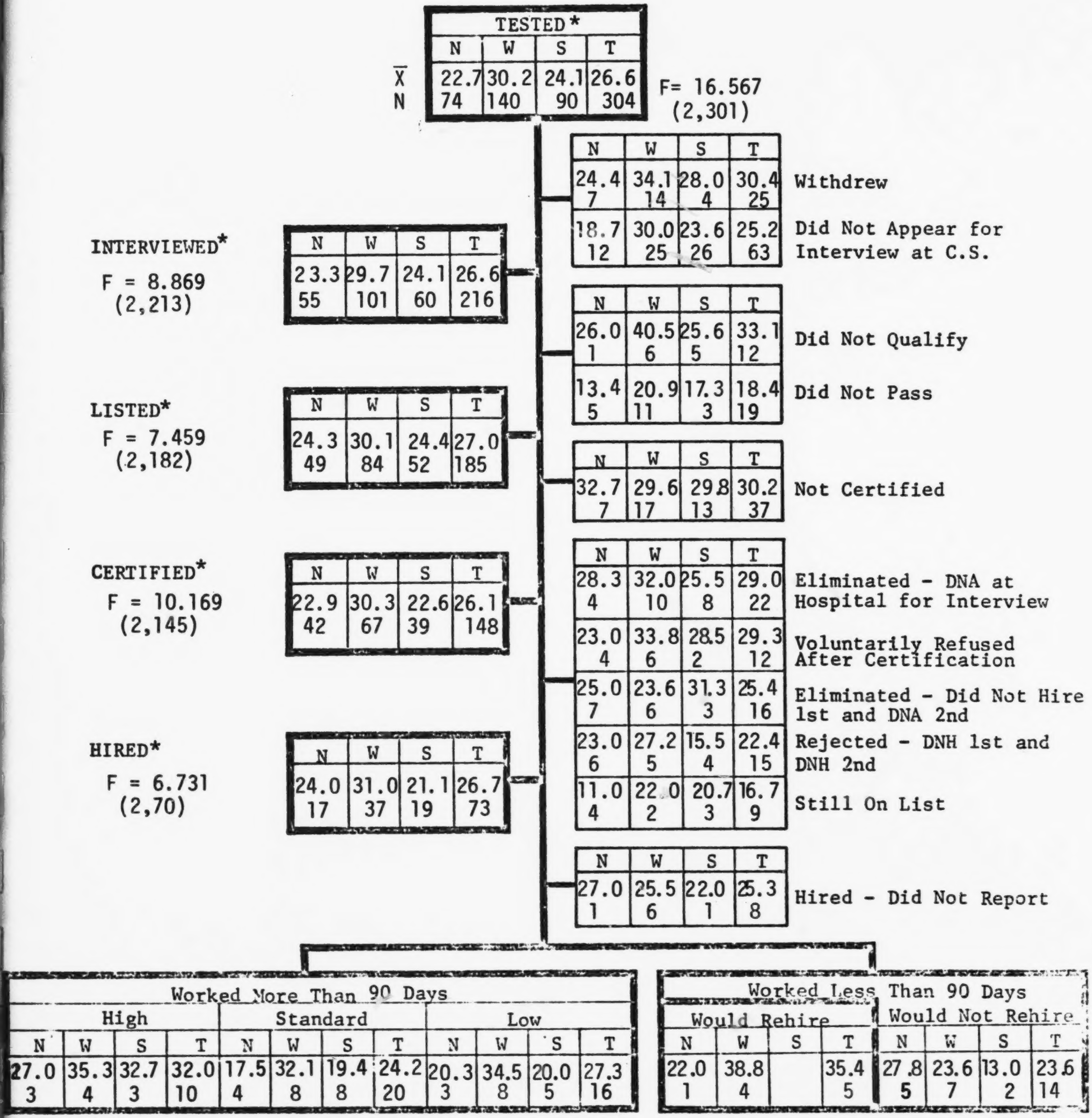
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
33.0 3	43.0 4	31.7 3	36.6 10	37.5 4	44.8 8	28.5 8	36.8 20	39.7 3	46.9 8	35.8 5	42.1 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
37.0 1	35.5 4		35.8 5	43.4 5	31.0 7	25.0 2	34.6 14

*Significant at .05 level or beyond

Graph 8. Visual Memory Score by Selection Stage and Ethnic Group

Matrices Score by Selection Stage and Ethnic Group



TESTED*

	N	W	S	T
$\overline{X}$	22.7	30.2	24.1	26.6
N	74	140	90	304

F= 16.567
(2,301)

N	W	S	T	
24.4 7	34.1 14	28.0 4	30.4 25	Withdrew
18.7 12	30.0 25	23.6 26	25.2 63	Did Not Appear for Interview at C.S.

INTERVIEWED*
F = 8.869
(2,213)

N	W	S	T
23.3 55	29.7 101	24.1 60	26.6 216

N	W	S	T	
26.0 1	40.5 6	25.6 5	33.1 12	Did Not Qualify
13.4 5	20.9 11	17.3 3	18.4 19	Did Not Pass

LISTED*
F = 7.459
(2,182)

N	W	S	T
24.3 49	30.1 84	24.4 52	27.0 185

N	W	S	T	
32.7 7	29.6 17	29.8 13	30.2 37	Not Certified

CERTIFIED*
F = 10.169
(2,145)

N	W	S	T
22.9 42	30.3 67	22.6 39	26.1 148

N	W	S	T	
28.3 4	32.0 10	25.5 8	29.0 22	Eliminated - DNA at Hospital for Interview
23.0 4	33.8 6	28.5 2	29.3 12	Voluntarily Refused After Certification
25.0 7	23.6 6	31.3 3	25.4 16	Eliminated - Did Not Hire 1st and DNA 2nd
23.0 6	27.2 5	15.5 4	22.4 15	Rejected - DNH 1st and DNH 2nd
11.0 4	22.0 2	20.7 3	16.7 9	Still On List

HIRED*
F = 6.731
(2,70)

N	W	S	T
24.0 17	31.0 37	21.1 19	26.7 73

N	W	S	T	
27.0 1	25.5 6	22.0 1	25.3 8	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
27.0 3	35.3 4	32.7 3	32.0 10	17.5 4	32.1 8	19.4 8	24.2 20	20.3 3	34.5 8	20.0 5	27.3 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
22.0 1	38.8 4		35.4 5	27.8 5	23.6 7	13.0 2	23.6 14

*Significant at .05 level or beyond

Graph 9. Matrices Score by Selection Stage and Ethnic Group further consideration who were eliminated by the selection process.

Of particular note is the Science Research Associates Non Verbal Test result shown in Graph 7. Prior to the present project, a cutting score of 30 had been used to eliminate applicants from further consideration. It will be noted that only two groups--Negro-Did Not Pass and Negro-Still On List--obtained mean scores below 30.

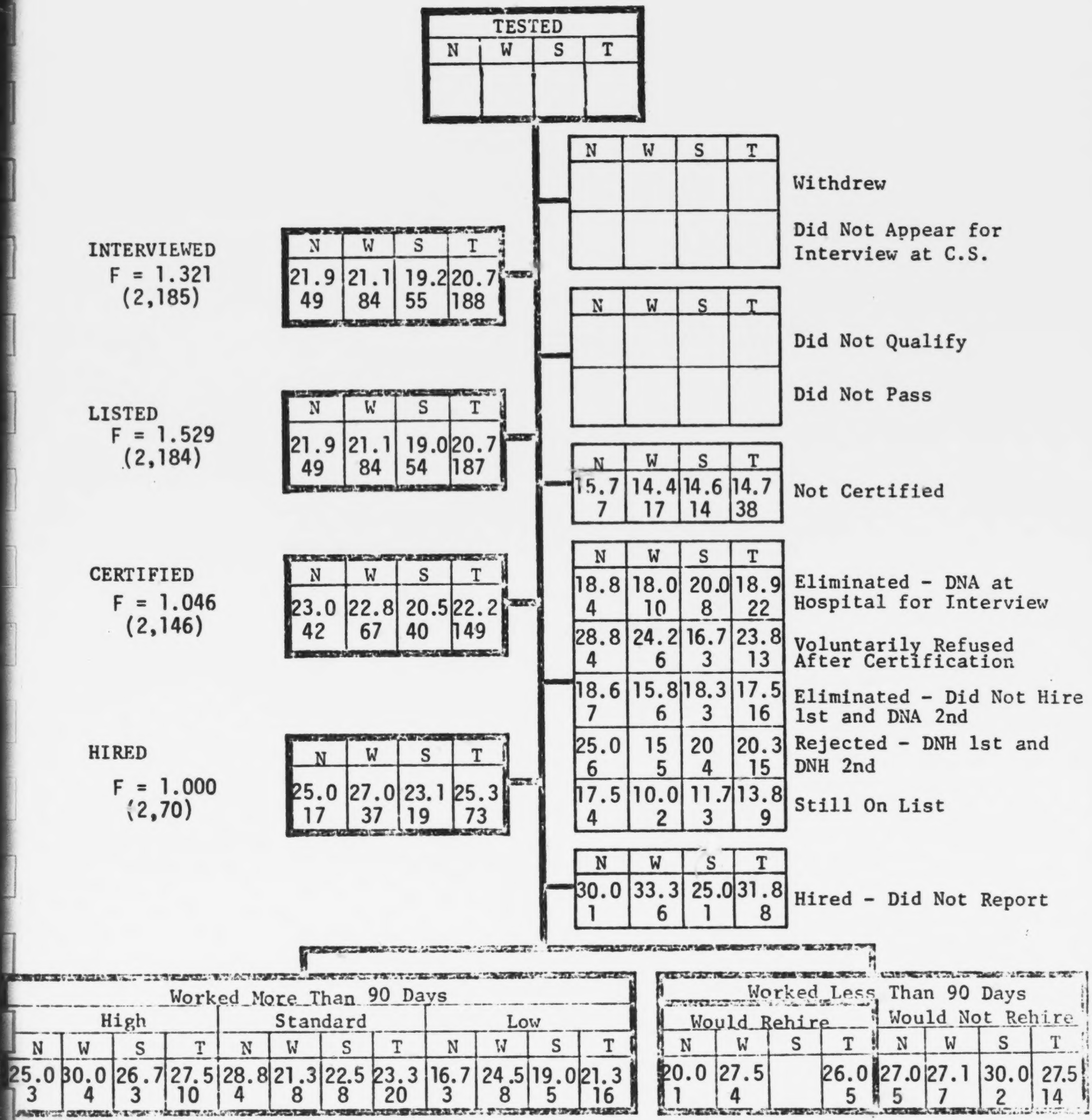
In general, the visual memory test and the X-0 perceptual discrimination tests yielded the most similar distributions of scores among the three ethnic groups. Those tests involving abstract relations tended to yield the greatest differences (Matrices and SRA Non Verbal).

In those instances where significantly different means among the tested groups were noted, the White group tended to score highest, the Spanish-surname group next, and the Negro group lowest. When those ultimately hired were compared, some reversals between the relative positions of the two minority groups can be noted.

In summary, consistent differences in test score among ethnic groups did appear at most selection stages, although the applicants tended to become more homogeneous as selection proceeded. This suggests that the test results tended to corroborate the interview ratings and the selection process.

In Graph 10 are shown the total interview ratings assigned the applicants by ethnic group. It can be noted that the three ethnic groups tended to receive more nearly similar interview ratings than test scores (non-significant F-values). It will also be noted that those hired had considerably higher interview ratings than those eliminated. This trend may be an artifact, however, in that the interview ratings entered into the selection procedure itself and yielded the observed results. Of

Total Interview Rating by Selection Stage and Ethnic Group



TESTED

N	W	S	T

Stage		N	W	S	T
INTERVIEWED	F = 1.321 (2,185)	21.9 49	21.1 84	19.2 55	20.7 188
LISTED	F = 1.529 (2,184)	21.9 49	21.1 84	19.0 54	20.7 187
CERTIFIED	F = 1.046 (2,146)	23.0 42	22.8 67	20.5 40	22.2 149
HIRED	F = 1.000 (2,70)	25.0 17	27.0 37	23.1 19	25.3 73

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.				
Did Not Qualify				
Did Not Pass				
Not Certified	15.7 7	14.4 17	14.6 14	14.7 38
Eliminated - DNA at Hospital for Interview	18.8 4	18.0 10	20.0 8	18.9 22
Voluntarily Refused After Certification	28.8 4	24.2 6	16.7 3	23.8 13
Eliminated - Did Not Hire 1st and DNA 2nd	18.6 7	15.8 6	18.3 3	17.5 16
Rejected - DNH 1st and DNH 2nd	25.0 6	15 5	20 4	20.3 15
Still On List	17.5 4	10.0 2	11.7 3	13.8 9
Hired - Did Not Report	30.0 1	33.3 6	25.0 1	31.8 8

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
25.0 3	30.0 4	26.7 3	27.5 10	28.8 4	21.3 8	22.5 8	23.3 20	16.7 3	24.5 8	19.0 5	21.3 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
20.0 1	27.5 4		26.0 5	27.0 5	27.1 7	30.0 2	27.5 14

Graph 10. Total Interview Rating by Selection Stage and Ethnic Group

particular importance to the present project is the similarity of the interview ratings assigned to the 188 applicants. The F-value of 1.321 is not significant and can be interpreted to mean that differences among the three ethnic groups in interview ratings are well within chance expectation.

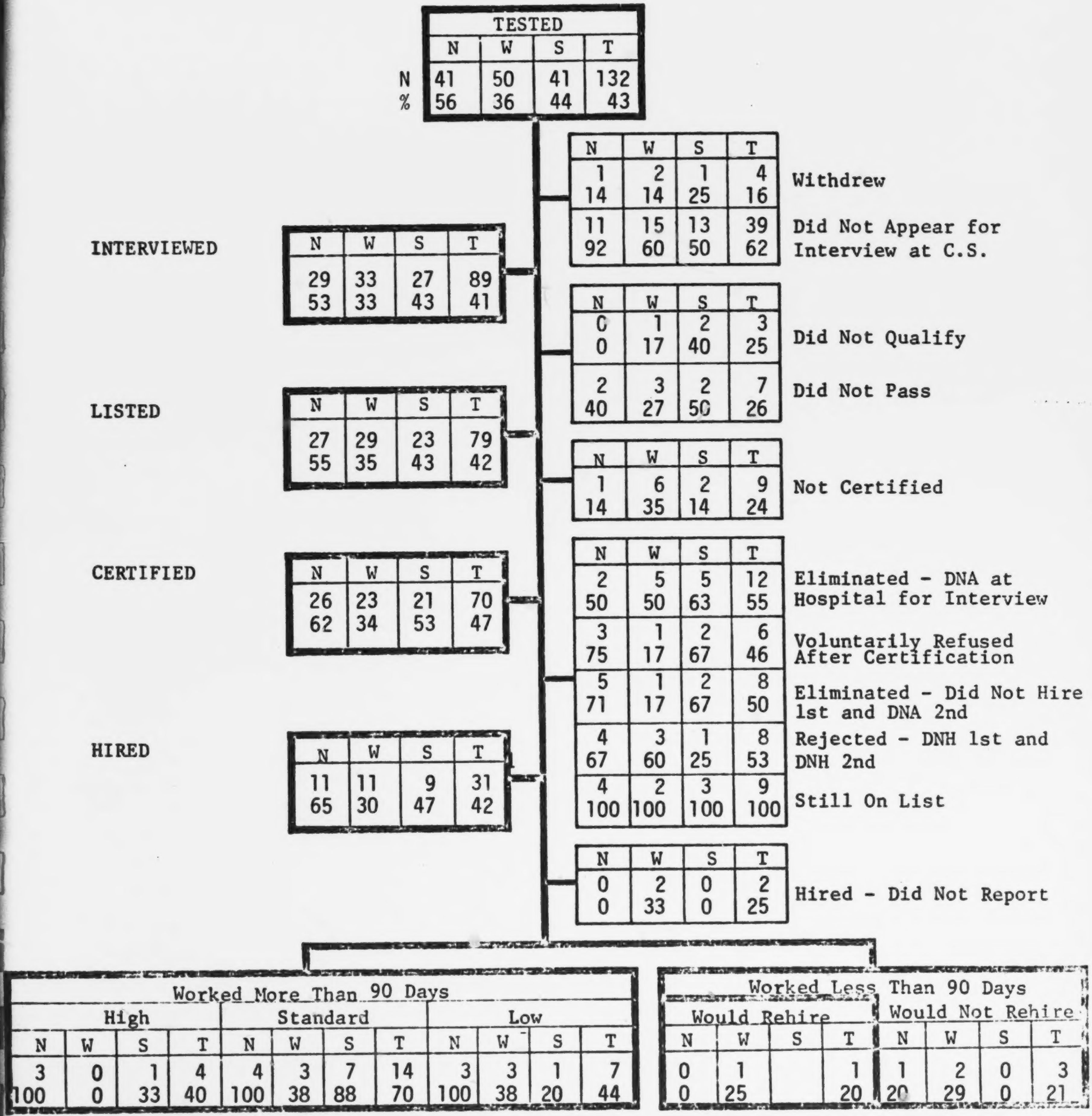
It is interesting to note that the interview ratings assigned the Negro group tended to be as high as or higher than those of the White group except in the hired category. The six Whites who did not report for work after having been offered a position had unusually high interview ratings, however, and removal of these values from the distribution lowered the mean value of the remaining individuals considerably.

In Graph 11 the sex of applicants by selection stage and ethnic group is shown. Inspection of this graph reveals a tendency for Negro women and White men to be employed as hospital attendants. Those eliminated because of not being certified tended to be male, however. Spanish-surname personnel maintained relatively constant proportions between sexes throughout the selection process.

A relatively higher proportion of married Spanish-surname personnel than White or Negro personnel in the applicant group is reflected in Graph 12. The lower proportions of White married applicants suggests that the majority of this classification may be seeking employment at higher levels in the job hierarchy than the job of hospital attendant.

A relatively small but constant percentage of veteran applicants by ethnic group is shown in Graph 13. It is interesting to note that the performance of these individuals hired as hospital attendants was not impressive. Of four Whites hired, one did not report and three worked less than 90 days. The two Spanish-surname personnel were rated

Sex (Female) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	41	50	41	132
%	56	36	44	43

	N	W	S	T
Withdrew	1 14	2 14	1 25	4 16
Did Not Appear for Interview at C.S.	11 92	15 60	13 50	39 62

INTERVIEWED

N	W	S	T
29 53	33 33	27 43	89 41

	N	W	S	T
Did Not Qualify	0 0	1 17	2 40	3 25
Did Not Pass	2 40	3 27	2 50	7 26

LISTED

N	W	S	T
27 55	29 35	23 43	79 42

	N	W	S	T
Not Certified	1 14	6 35	2 14	9 24

CERTIFIED

N	W	S	T
26 62	23 34	21 53	70 47

	N	W	S	T
Eliminated - DNA at Hospital for Interview	2 50	5 50	5 63	12 55
Voluntarily Refused After Certification	3 75	1 17	2 67	6 46
Eliminated - Did Not Hire 1st and DNA 2nd	5 71	1 17	2 67	8 50
Rejected - DNH 1st and DNH 2nd	4 67	3 60	1 25	8 53
Still On List	4 100	2 100	3 100	9 100

HIRED

N	W	S	T
11 65	11 30	9 47	31 42

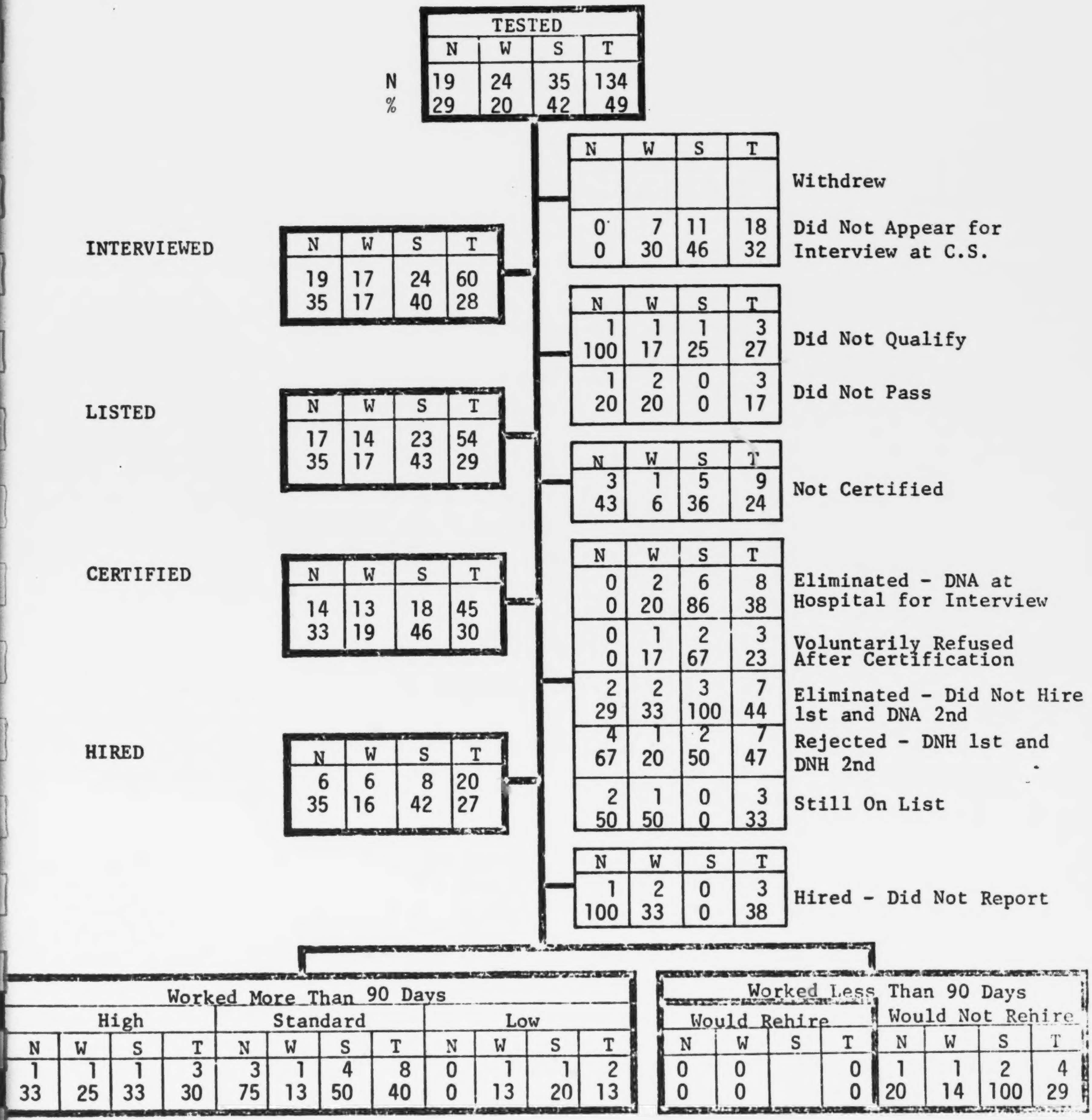
	N	W	S	T
Hired - Did Not Report	0 0	2 33	0 0	2 25

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
3 100	0 0	1 33	4 40	4 100	3 38	7 88	14 70	3 100	3 38	1 20	7 44

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	1 25		1 20	1 20	2 29	0 0	3 21

Graph 11. Sex (Female) by Selection Stage and Ethnic Group

Marital Status (Married) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	19	24	35	134
%	29	20	42	49

INTERVIEWED

N	W	S	T
19	17	24	60
35	17	40	28

LISTED

N	W	S	T
17	14	23	54
35	17	43	29

CERTIFIED

N	W	S	T
14	13	18	45
33	19	46	30

HIRED

N	W	S	T
6	6	8	20
35	16	42	27

N	W	S	T	
				Withdrew
0 0	7 30	11 46	18 32	Did Not Appear for Interview at C.S.

N	W	S	T	
1 100	1 17	1 25	3 27	Did Not Qualify
1 20	2 20	0 0	3 17	Did Not Pass

N	W	S	T	
3 43	1 6	5 36	9 24	Not Certified

N	W	S	T	
0 0	2 20	6 86	8 38	Eliminated - DNA at Hospital for Interview
0 0	1 17	2 67	3 23	Voluntarily Refused After Certification
2 29	2 33	3 100	7 44	Eliminated - Did Not Hire 1st and DNA 2nd
4 67	1 20	2 50	7 47	Rejected - DNH 1st and DNH 2nd
2 50	1 50	0 0	3 33	Still On List

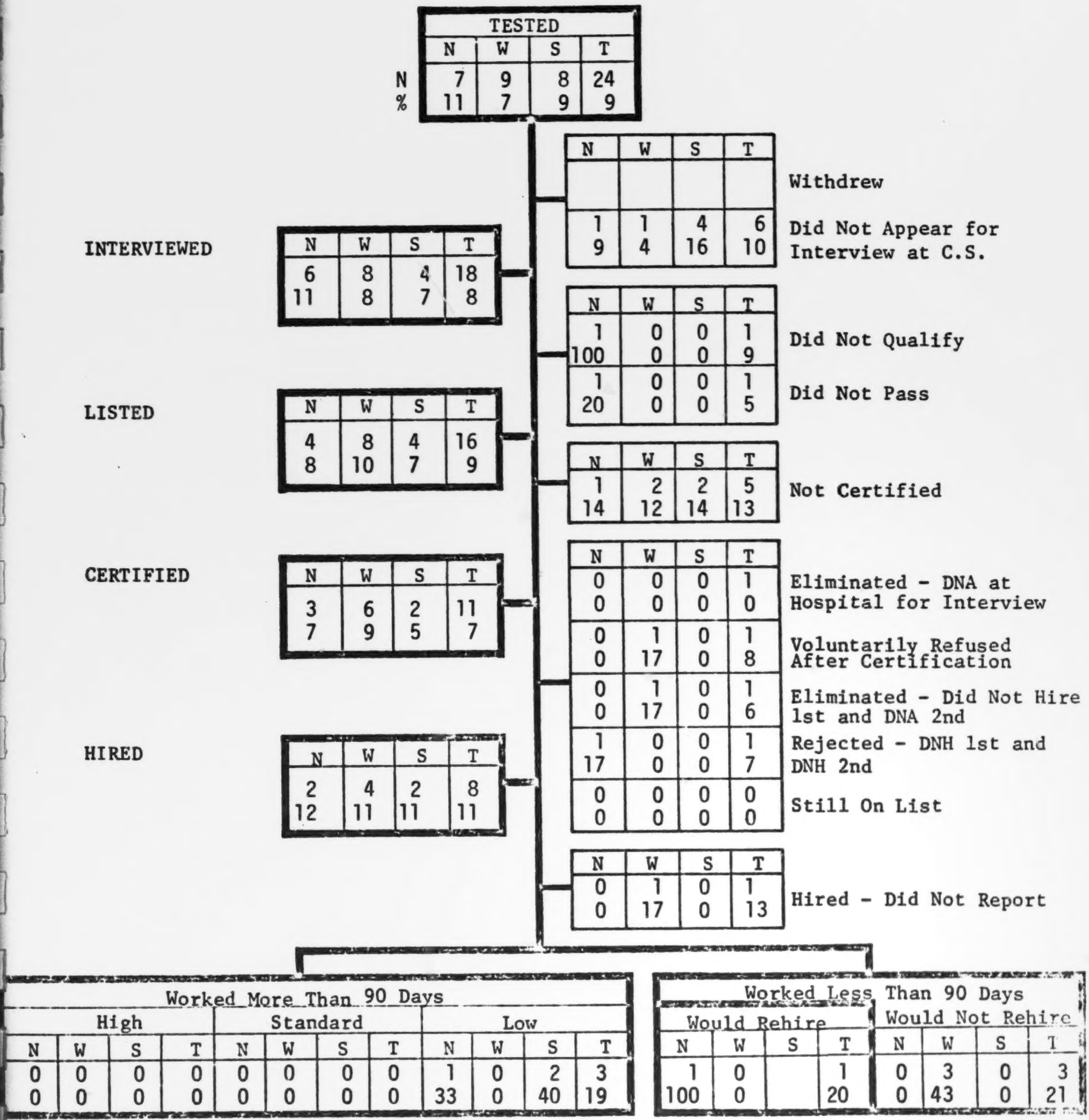
N	W	S	T	
1 100	2 33	0 0	3 38	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
1	1	1	3	3	1	4	8	0	1	1	2
33	25	33	30	75	13	50	40	0	13	20	13

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	0		0	1	1	2	4
0	0		0	20	14	100	29

Graph 12. Marital Status by Selection Stage and Ethnic Group

Veteran Status (Yes) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	7	9	8	24
%	11	7	9	9

INTERVIEWED

N	W	S	T
6	8	4	18
11	8	7	8

LISTED

N	W	S	T
4	8	4	16
8	10	7	9

CERTIFIED

N	W	S	T
3	6	2	11
7	9	5	7

HIRED

N	W	S	T
2	4	2	8
12	11	11	11

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	1 9	1 4	4 16	6 10

	N	W	S	T
Did Not Qualify	1 100	0 0	0 0	1 9
Did Not Pass	1 20	0 0	0 0	1 5

	N	W	S	T
Not Certified	1 14	2 12	2 14	5 13

	N	W	S	T
Eliminated - DNA at Hospital for Interview	0 0	0 0	0 0	1 0
Voluntarily Refused After Certification	0 0	1 17	0 0	1 8
Eliminated - Did Not Hire 1st and DNA 2nd	0 0	1 17	0 0	1 6
Rejected - DNH 1st and DNH 2nd	1 17	0 0	0 0	1 7
Still On List	0 0	0 0	0 0	0 0

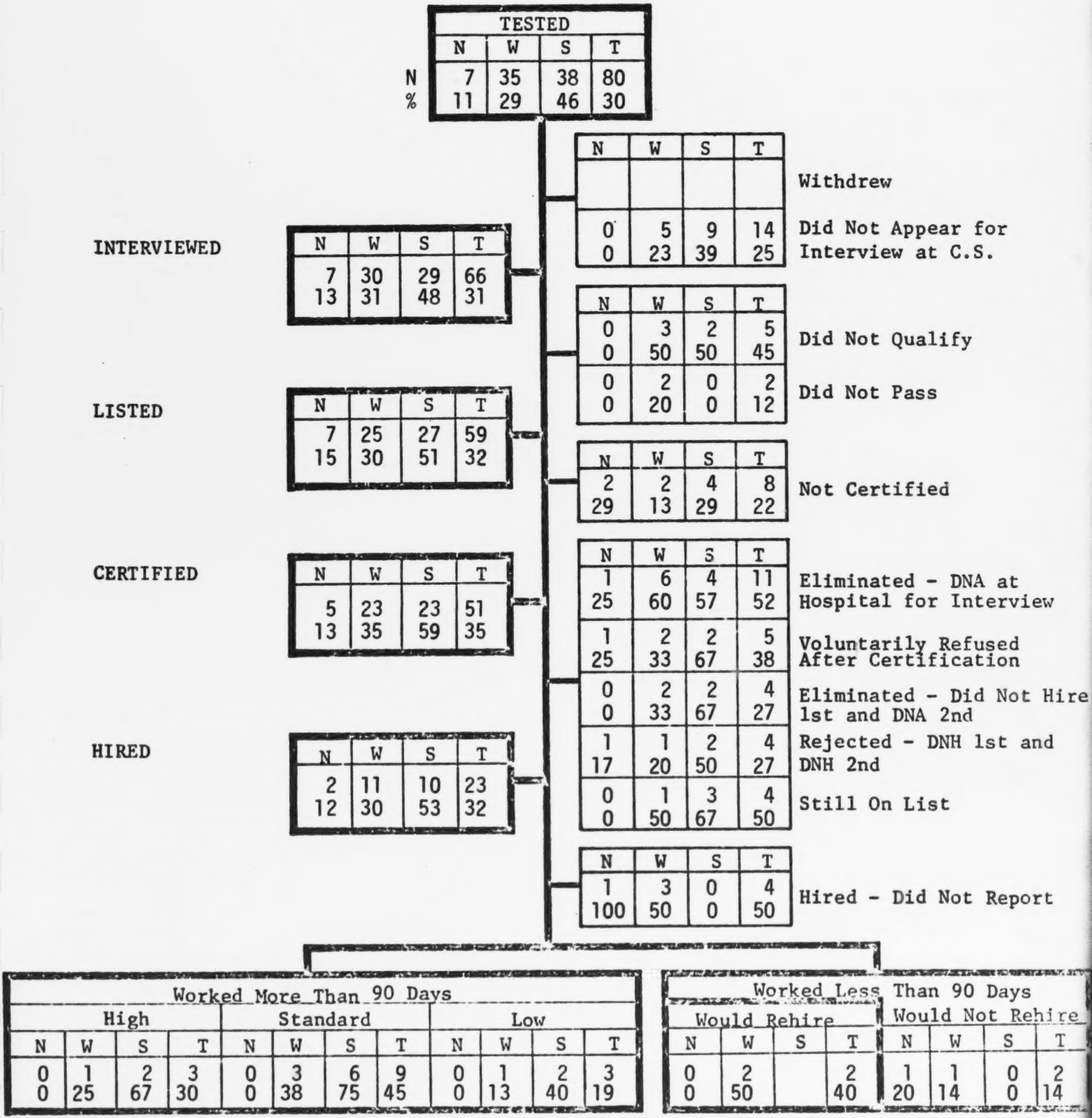
	N	W	S	T
Hired - Did Not Report	0 0	1 17	0 0	1 13

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	0	0	0	0	0	0	0	1	0	2	3
0	0	0	0	0	0	0	0	33	0	40	19

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1	0		1	0	3	0	3
100	0		20	0	43	0	21

Graph 13. Veteran Status (Yes) by Selection Stage and Ethnic Group

Foreign Language (yes) by Selection Stage and Ethnic Group



		N	W	S	T
TESTED	N	7	35	38	80
	%	11	29	46	30
INTERVIEWED		7	30	29	66
		13	31	48	31
LISTED		7	25	27	59
		15	30	51	32
CERTIFIED		5	23	23	51
		13	35	59	35
HIRED		2	11	10	23
		12	30	53	32

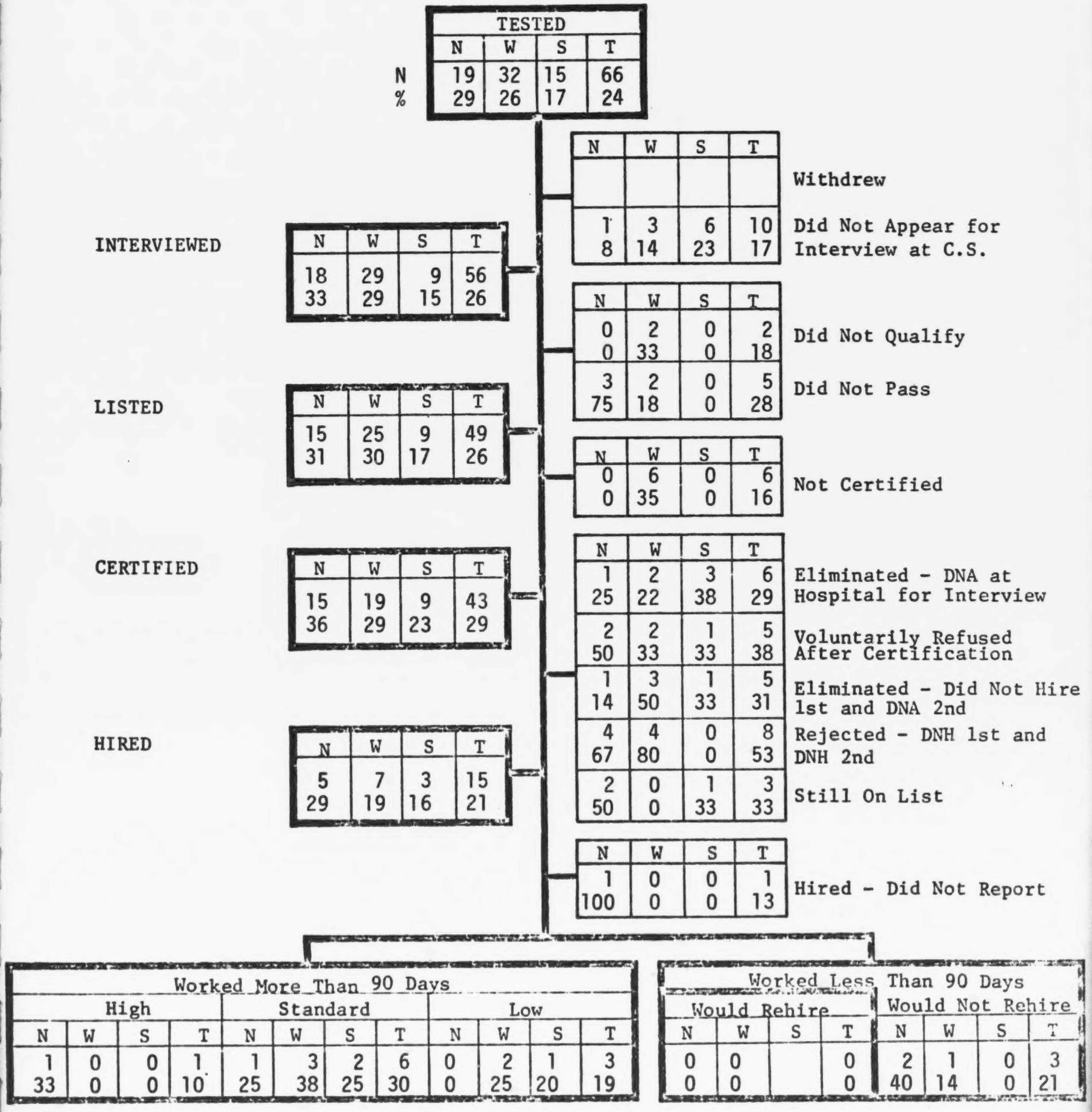
N	W	S	T	
				Withdrew
0	5	9	14	Did Not Appear for Interview at C.S.
0	23	39	25	
0	3	2	5	Did Not Qualify
0	50	50	45	
0	2	0	2	Did Not Pass
0	20	0	12	
2	2	4	8	Not Certified
29	13	29	22	
1	6	4	11	Eliminated - DNA at Hospital for Interview
25	60	57	52	
1	2	2	5	Voluntarily Refused After Certification
25	33	67	38	
0	2	2	4	Eliminated - Did Not Hire 1st and DNA 2nd
0	33	67	27	
1	1	2	4	Rejected - DNH 1st and DNH 2nd
17	20	50	27	
0	1	3	4	Still On List
0	50	67	50	
1	3	0	4	Hired - Did Not Report
100	50	0	50	

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	1	2	3	0	3	6	9	0	1	2	3
0	25	67	30	0	38	75	45	0	13	40	19

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	2		2	1	1	0	2
0	50		40	20	14	0	14

Graph 14. Foreign Language (Yes) by Selection Stage and Ethnic Group

Presently Employed (yes) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	19	32	15	66
%	29	26	17	24

INTERVIEWED

N	W	S	T
18	29	9	56
33	29	15	26

LISTED

N	W	S	T
15	25	9	49
31	30	17	26

CERTIFIED

N	W	S	T
15	19	9	43
36	29	23	29

HIRED

N	W	S	T
5	7	3	15
29	19	16	21

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	1 8	3 14	6 23	10 17

	N	W	S	T
Did Not Qualify	0 0	2 33	0 0	2 18
Did Not Pass	3 75	2 18	0 0	5 28

	N	W	S	T
Not Certified	0 0	6 35	0 0	6 16

	N	W	S	T
Eliminated - DNA at Hospital for Interview	1 25	2 22	3 38	6 29
Voluntarily Refused After Certification	2 50	2 33	1 33	5 38
Eliminated - Did Not Hire 1st and DNA 2nd	1 14	3 50	1 33	5 31
Rejected - DNH 1st and DNH 2nd	4 67	4 80	0 0	8 53
Still On List	2 50	0 0	1 33	3 33

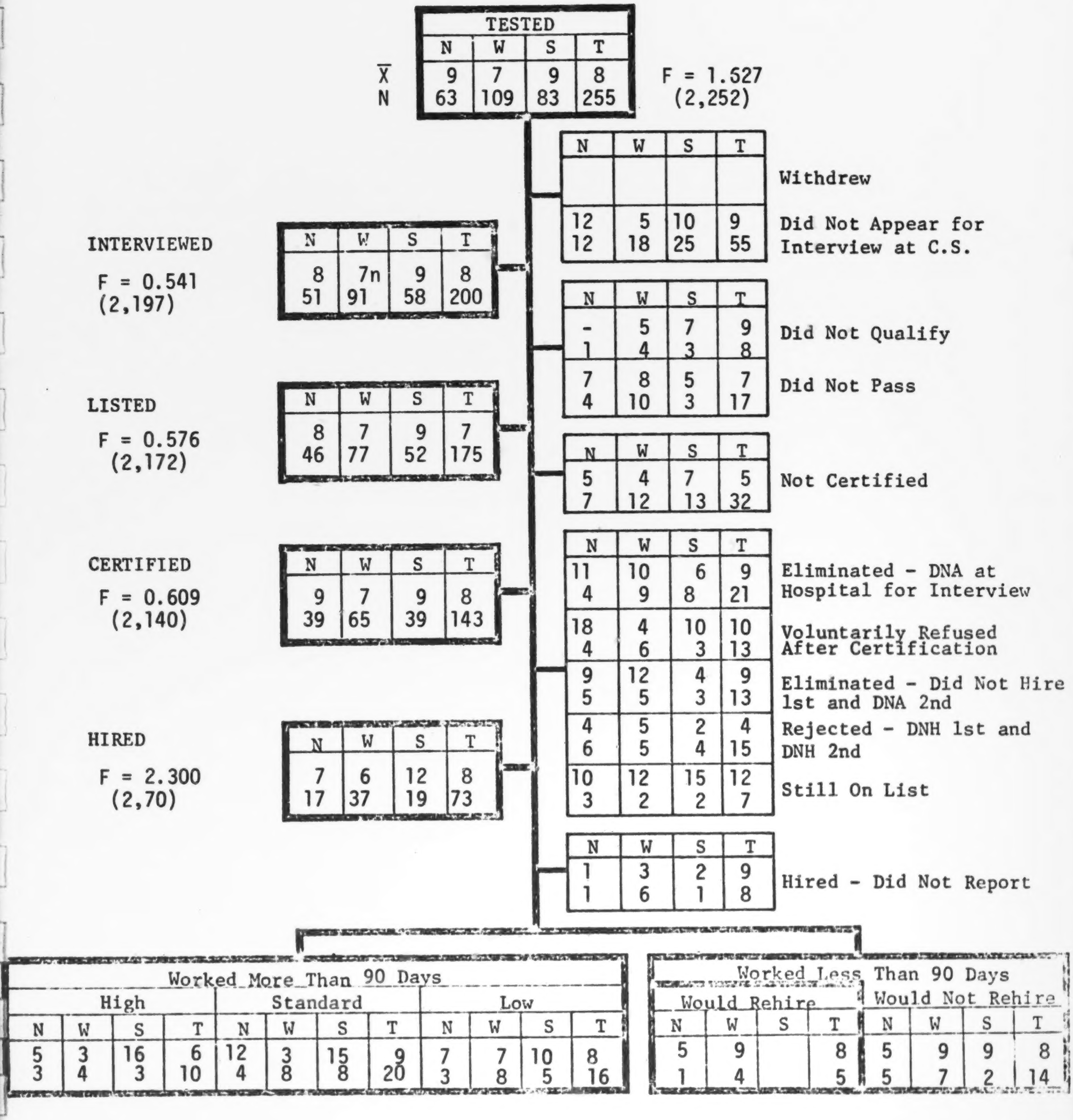
	N	W	S	T
Hired - Did Not Report	1 100	0 0	0 0	1 13

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
1	0	0	1	1	3	2	6	0	2	1	3
33	0	0	10	25	38	25	30	0	25	20	19

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	0		0	2	1	0	3
0	0		0	40	14	0	21

Graph 15. Presently Employed (Yes) by Selection Stage and Ethnic Group

Length of Last Job (Months) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
$\overline{X}$	9	7	9	8
N	63	109	83	255

F = 1.527
(2,252)

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	12 12	5 18	10 25	9 55

INTERVIEWED

F = 0.541
(2,197)

N	W	S	T
8 51	7n 91	9 58	8 200

	N	W	S	T
Did Not Qualify	- 1	5 4	7 3	9 8
Did Not Pass	7 4	8 10	5 3	7 17

LISTED

F = 0.576
(2,172)

N	W	S	T
8 46	7 77	9 52	7 175

	N	W	S	T
Not Certified	5 7	4 12	7 13	5 32

CERTIFIED

F = 0.609
(2,140)

N	W	S	T
9 39	7 65	9 39	8 143

	N	W	S	T
Eliminated - DNA at Hospital for Interview	11 4	10 9	6 8	9 21
Voluntarily Refused After Certification	18 4	4 6	10 3	10 13
Eliminated - Did Not Hire 1st and DNA 2nd	9 5	12 5	4 3	9 13
Rejected - DNH 1st and DNH 2nd	4 6	5 5	2 4	4 15
Still On List	10 3	12 2	15 2	12 7

HIRED

F = 2.300
(2,70)

N	W	S	T
7 17	6 37	12 19	8 73

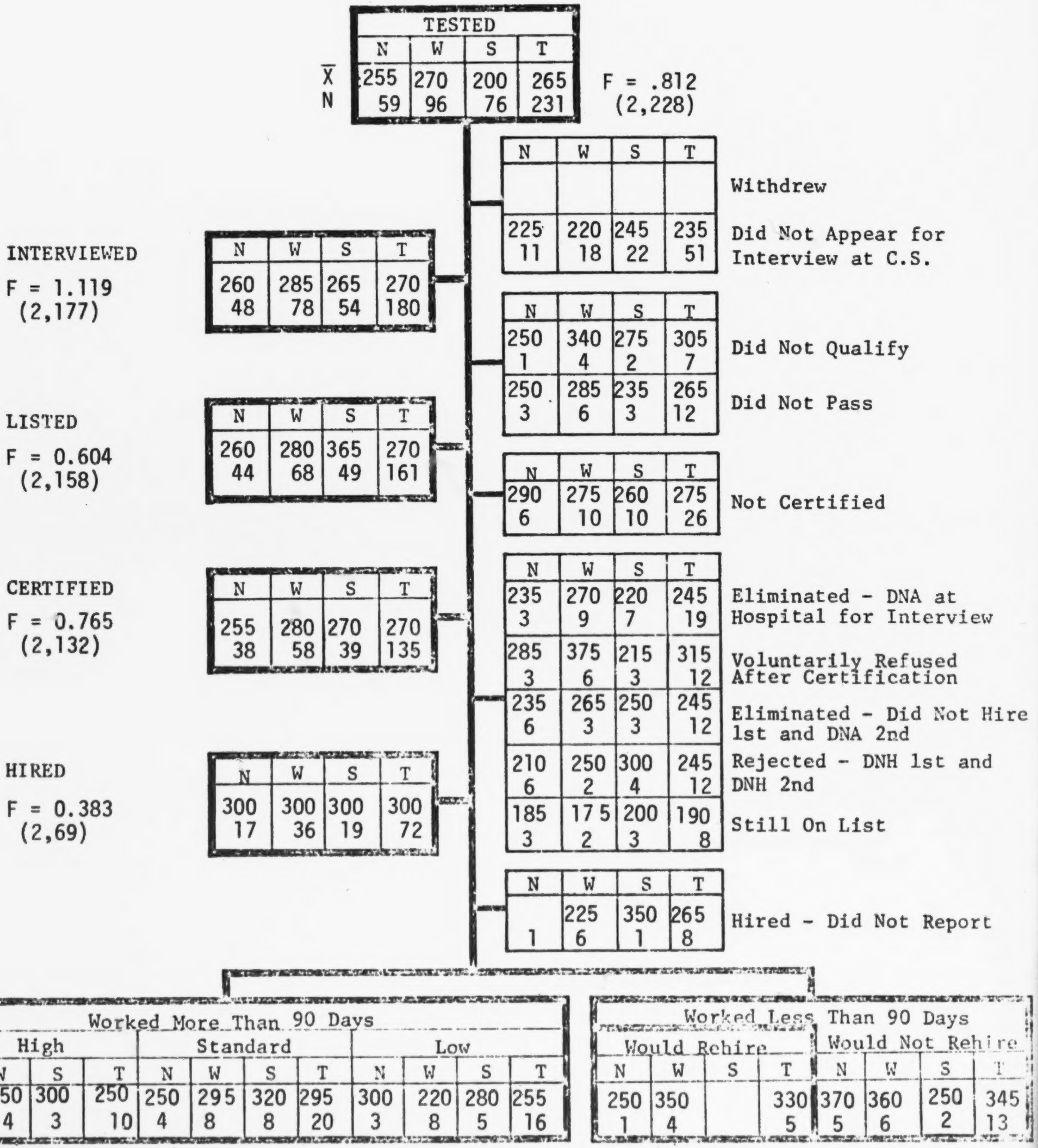
	N	W	S	T
Hired - Did Not Report	1 1	3 6	2 1	9 8

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
5 3	3 4	16 3	6 10	12 4	3 8	15 8	9 20	7 3	7 8	10 5	8 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
5 1	9 4		8 5	5 5	9 7	9 2	8 14

Graph 16. Length of Last Job (Months) by Selection Stage and Ethnic Group

Money Earned on Last Job by Selection Stage and Ethnic Group



TESTED

F = .812
(2,228)

	N	W	S	T
$\overline{X}$	255	270	200	265
N	59	96	76	231

INTERVIEWED

F = 1.119
(2,177)

N	W	S	T
260 48	285 78	265 54	270 180

LISTED

F = 0.604
(2,158)

N	W	S	T
260 44	280 68	365 49	270 161

CERTIFIED

F = 0.765
(2,132)

N	W	S	T
255 38	280 58	270 39	270 135

HIRED

F = 0.383
(2,69)

N	W	S	T
300 17	300 36	300 19	300 72

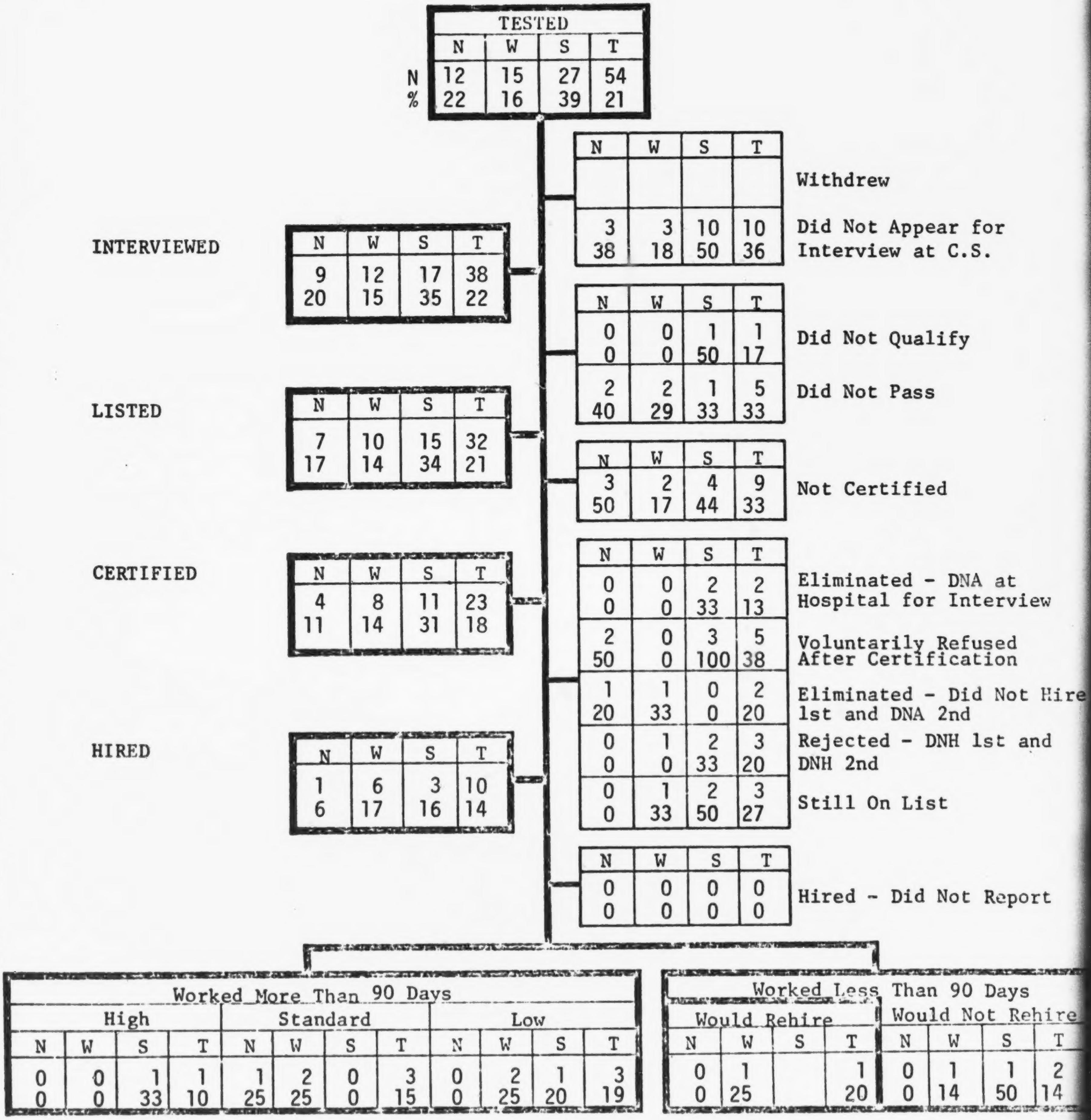
	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	225 11	220 18	245 22	235 51
Did Not Qualify	250 1	340 4	275 2	305 7
Did Not Pass	250 3	285 6	235 3	265 12
Not Certified	290 6	275 10	260 10	275 26
Eliminated - DNA at Hospital for Interview	235 3	270 9	220 7	245 19
Voluntarily Refused After Certification	285 3	375 6	215 3	315 12
Eliminated - Did Not Hire 1st and DNA 2nd	235 6	265 3	250 3	245 12
Rejected - DNH 1st and DNH 2nd	210 6	250 2	300 4	245 12
Still On List	185 3	175 2	200 3	190 8
Hired - Did Not Report	1	225 6	350 1	265 8

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
200 3	250 4	300 3	250 10	250 4	295 8	320 8	295 20	300 3	220 8	280 5	255 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
250 1	350 4		330 5	370 5	360 6	250 2	345 13

Graph 17. Money Earned on Last Job by Selection Stage and Ethnic Group

Last Job Unskilled by Selection Stage and Ethnic Group



		N	W	S	T
TESTED	N	12	15	27	54
	%	22	16	39	21
INTERVIEWED		9	12	17	38
		20	15	35	22
LISTED		7	10	15	32
		17	14	34	21
CERTIFIED		4	8	11	23
		11	14	31	18
HIRED		1	6	3	10
		6	17	16	14

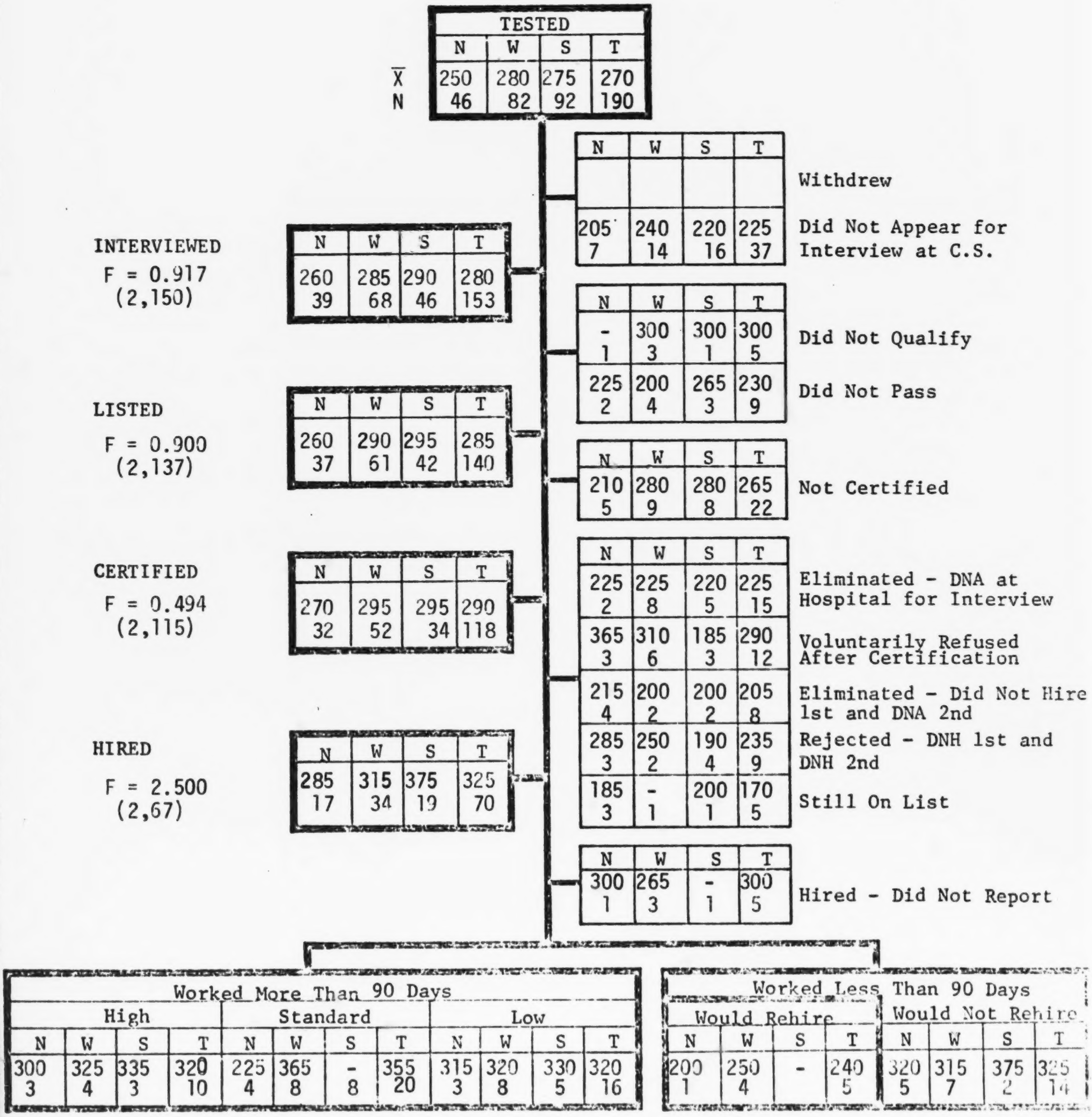
	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	3	3	10	10
	38	18	50	36
Did Not Qualify	0	0	1	1
	0	0	50	17
Did Not Pass	2	2	1	5
	40	29	33	33
Not Certified	3	2	4	9
	50	17	44	33
Eliminated - DNA at Hospital for Interview	0	0	2	2
	0	0	33	13
Voluntarily Refused After Certification	2	0	3	5
	50	0	100	38
Eliminated - Did Not Hire 1st and DNA 2nd	1	1	0	2
	20	33	0	20
Rejected - DNH 1st and DNH 2nd	0	1	2	3
	0	0	33	20
Still On List	0	1	2	3
	0	33	50	27
Hired - Did Not Report	0	0	0	0
	0	0	0	0

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	0	1	1	1	2	0	3	0	2	1	3
0	0	33	10	25	25	0	15	0	25	20	19

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	1		1	0	1	1	2
0	25		20	0	14	50	14

Graph 18. Last Job Unskilled by Selection Stage and Ethnic Group

Money Earned on Next to Last Job by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
$\bar{X}$	250	280	275	270
N	46	82	92	190

INTERVIEWED
F = 0.917
(2,150)

N	W	S	T
260	285	290	280
39	68	46	153

LISTED
F = 0.900
(2,137)

N	W	S	T
260	290	295	285
37	61	42	140

CERTIFIED
F = 0.494
(2,115)

N	W	S	T
270	295	295	290
32	52	34	118

HIRED
F = 2.500
(2,67)

N	W	S	T
285	315	375	325
17	34	19	70

N	W	S	T	
				Withdrew
205 7	240 14	220 16	225 37	Did Not Appear for Interview at C.S.

N	W	S	T	
- 1	300 3	300 1	300 5	Did Not Qualify
225 2	200 4	265 3	230 9	Did Not Pass

N	W	S	T	
210 5	280 9	280 8	265 22	Not Certified

N	W	S	T	
225 2	225 8	220 5	225 15	Eliminated - DNA at Hospital for Interview
365 3	310 6	185 3	290 12	Voluntarily Refused After Certification
215 4	200 2	200 2	205 8	Eliminated - Did Not Hire 1st and DNA 2nd
285 3	250 2	190 4	235 9	Rejected - DNH 1st and DNH 2nd
185 3	- 1	200 1	170 5	Still On List

N	W	S	T	
300 1	265 3	- 1	300 5	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
300	325	335	320	225	365	-	355	315	320	330	320
3	4	3	10	4	8	8	20	3	8	5	16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
200	250	-	240	320	315	375	325
1	4		5	5	7	2	14

Graph 19. Money Earned on Next to Last Job by Selection Stage and Ethnic Group

as "low" performance. One Negro worked less than 90 days and qualified as "would rehire" and the other worked more than 90 days but was rated "low."

In Graph 14 are shown the data relative to foreign languages spoken by applicants. As might be expected, Spanish-surname personnel listed ability to speak a foreign language more frequently than the other two groups, although a surprisingly high proportion in each of the other two groups listed this characteristic. Apparently, ability to speak a foreign language is unrelated to ultimate performance on this job, however.

In Graph 15 the percentage of applicants presently employed is shown by selection stage and ethnic group. Highest proportion of presently employed was among the Negroes.

In Graph 16 are shown the mean months on last job by selection stage and ethnic group. Although differences among the groups were not statistically significant, the White group had held the previous job for a shorter time, on the average, than the other two groups.

Differences in money earned (monthly) on last job by ethnic group and selection stage are shown in Graph 17. In the original job applicant group (tested) the Whites had the highest mean monthly salary, although the three hired groups did not differ in this respect.

The percentage of individuals listing an unskilled job as their last employment is shown in Graph 18. Although the numbers are relatively small, the two minority groups had higher percentages in this category than the White group.

Money earned on the next to last job is shown by ethnic group and selection stage in Graph 19. As in Graph 17, the Whites in the tested group listed the highest mean monthly salary. For those hired, however, the Spanish-surname personnel listed the highest salary. This suggests that the Negroes in the hired group were moving upward in salary whereas the other two groups were moving downward in this respect.

Health related experience of applicants is shown in Graph 20. Whereas the small numbers make interpretation of these data difficult, it is interesting to note that the preponderance of Spanish-surname personnel who had had health related experience rated standard or above (7 of 8) and all worked more than 90 days.

In Graphs 21 and 22 the percentages of applicants who had lived in Denver less than 6 months and more than 36 months are shown. No particular pattern is apparent for this characteristic.

The number and proportion of applicants having violated the law (as listed on their application form) are shown in Graph 23. Here it can be seen that the two minority groups listed this characteristic relatively more frequently than did Whites.

In Graphs 24, 25 and 26 are shown the bases of application for the three ethnic groups. Differences in source among the three groups are noteworthy. Whereas newspaper was listed by 38% of Whites as the basis for application, only 11% of the Negroes and 18% of the Spanish-surname personnel indicated this source as the basis for their applications. Conversely, friend was listed least often by Whites. It should be noted that the application form listed other alternatives than the three sources shown in the graphs, but these were most frequently designated by this population. These graphs suggest that different recruiting techniques will be appropriate for different ethnic groups in this population of job applicants.

Health Related Experience (yes) by Selection Stage and Ethnic Group

TESTED

	N	W	S	T
N	31	41	31	103
%	46	34	36	37

N	W	S	T	
				Withdrew
4 33	6 26	7 27	17 28	Did Not Appear for Interview at C.S.

INTERVIEWED

N	W	S	T
27 49	35 36	24 39	86 40

N	W	S	T	
0 0	0 0	0 0	0 0	Did Not Qualify
2 40	3 27	2 67	7 37	Did Not Pass

LISTED

N	W	S	T
25 51	32 40	22 41	79 43

N	W	S	T	
1 14	3 18	2 14	6 16	Not Certified

CERTIFIED

N	W	S	T
24 57	29 45	20 50	73 50

N	W	S	T	
2 50	3 33	3 38	8 38	Eliminated - DNA at Hospital for Interview
3 75	1 20	2 67	6 50	Voluntarily Refused After Certification
2 29	1 17	2 67	5 31	Eliminated - Did Not Hire 1st and DNA 2nd
4 67	1 20	2 50	7 47	Rejected - DNH 1st and DNH 2nd
1 100	5 83	0 0	6 75	Still On List

HIRED

N	W	S	T
6 35	19 28	8 42	34 47

N	W	S	T	
1 100	5 83	0 0	6 75	Hired - Did Not Report

Worked More Than 90 Days

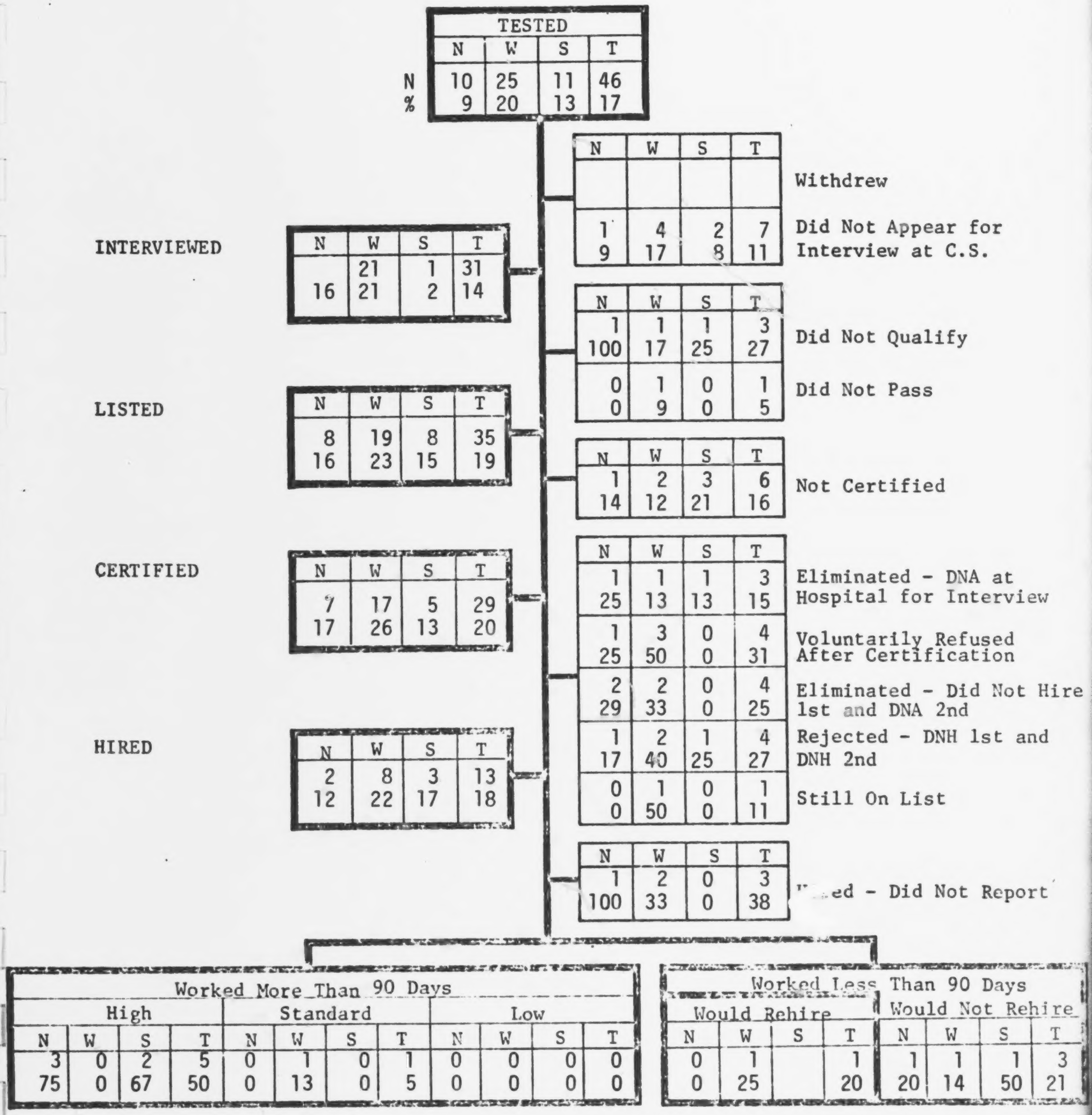
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
3 100	2 50	2 67	7 70	3 75	5 63	5 63	13 65	0 0	2 29	1 20	3 20

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	1 25		1 20	1 20	5 71	0 0	6 43

Graph 20. Health Related Experience (Yes) by Selection Stage and Ethnic Group

Length of Time in Denver by Selection Stage and Ethnic Group
(Less Than 6 months)



TESTED

	N	W	S	T
N	10	25	11	46
%	9	20	13	17

INTERVIEWED

N	W	S	T
	21	1	31
16	21	2	14

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	1 9	4 17	2 8	7 11

LISTED

N	W	S	T
8	19	8	35
16	23	15	19

	N	W	S	T
Did Not Qualify	1 100	1 17	1 25	3 27
Did Not Pass	0 0	1 9	0 0	1 5

CERTIFIED

N	W	S	T
7	17	5	29
17	26	13	20

	N	W	S	T
Not Certified	1 14	2 12	3 21	6 16

HIRED

N	W	S	T
2	8	3	13
12	22	17	18

	N	W	S	T
Eliminated - DNA at Hospital for Interview	1 25	1 13	1 13	3 15
Voluntarily Refused After Certification	1 25	3 50	0 0	4 31
Eliminated - Did Not Hire 1st and DNA 2nd	2 29	2 33	0 0	4 25
Rejected - DNH 1st and DNH 2nd	1 17	2 40	1 25	4 27
Still On List	0 0	1 50	0 0	1 11

	N	W	S	T
Hired - Did Not Report	1 100	2 33	0 0	3 38

Worked More Than 90 Days

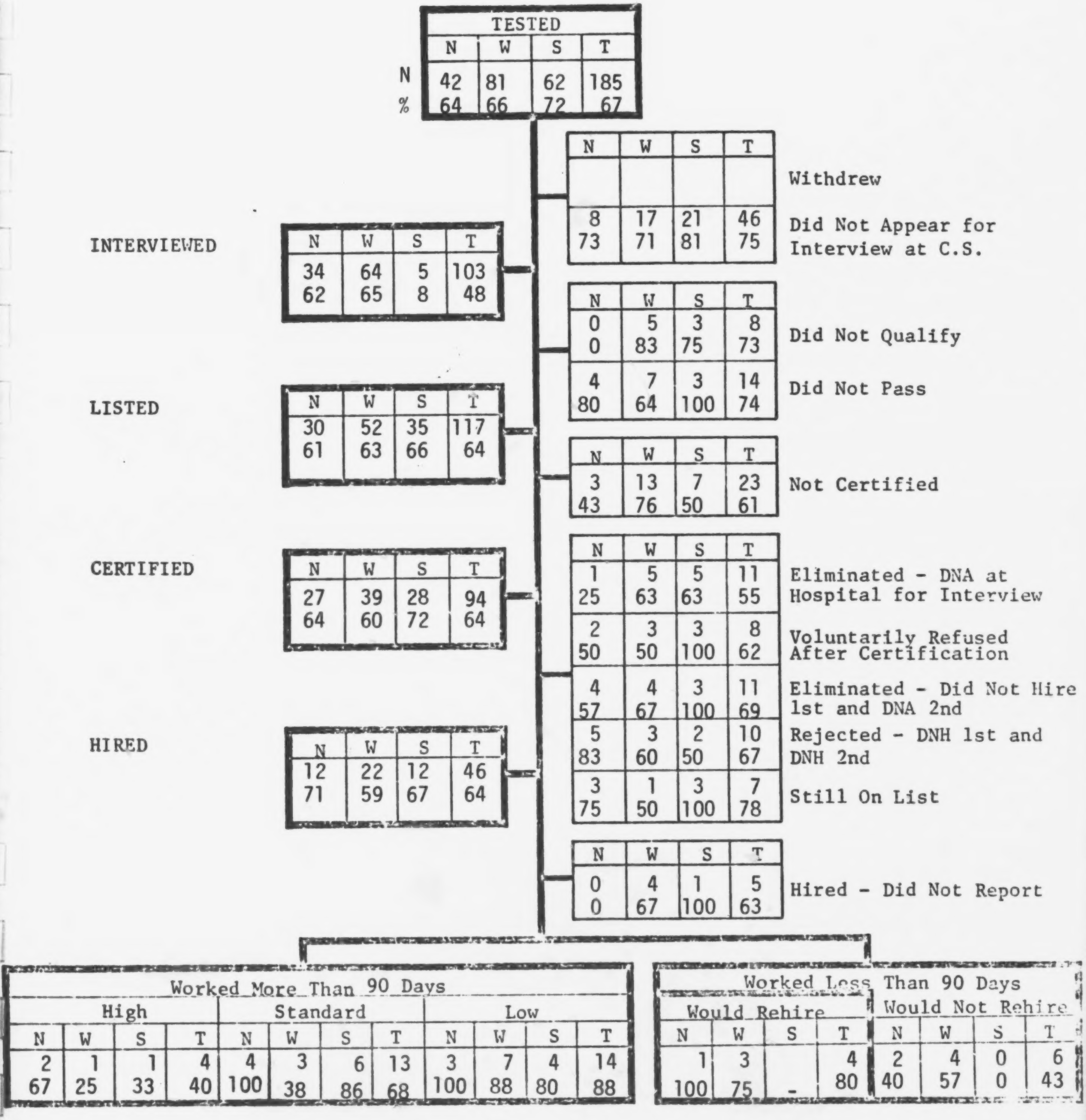
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
3	0	2	5	0	1	0	1	0	0	0	0
75	0	67	50	0	13	0	5	0	0	0	0

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	1		1	1	1	1	3
0	25		20	20	14	50	21

Graph 21. Length of time in Denver by Selection Stage and Ethnic Group
(Less Than 6 Months)

Length of Time in Denver by Selection Stage and Ethnic Group
(More Than 36 Months)



TESTED

	N	W	S	T
N	42	81	62	185
%	64	66	72	67

INTERVIEWED

N	W	S	T
34 62	64 65	5 8	103 48

LISTED

N	W	S	T
30 61	52 63	35 66	117 64

CERTIFIED

N	W	S	T
27 64	39 60	28 72	94 64

HIRED

N	W	S	T
12 71	22 59	12 67	46 64

N	W	S	T	
				Withdrew
8 73	17 71	21 81	46 75	Did Not Appear for Interview at C.S.

N	W	S	T	
0 0	5 83	3 75	8 73	Did Not Qualify
4 80	7 64	3 100	14 74	Did Not Pass

N	W	S	T	
3 43	13 76	7 50	23 61	Not Certified

N	W	S	T	
1 25	5 63	5 63	11 55	Eliminated - DNA at Hospital for Interview
2 50	3 50	3 100	8 62	Voluntarily Refused After Certification
4 57	4 67	3 100	11 69	Eliminated - Did Not Hire 1st and DNA 2nd
5 83	3 60	2 50	10 67	Rejected - DNH 1st and DNH 2nd
3 75	1 50	3 100	7 78	Still On List

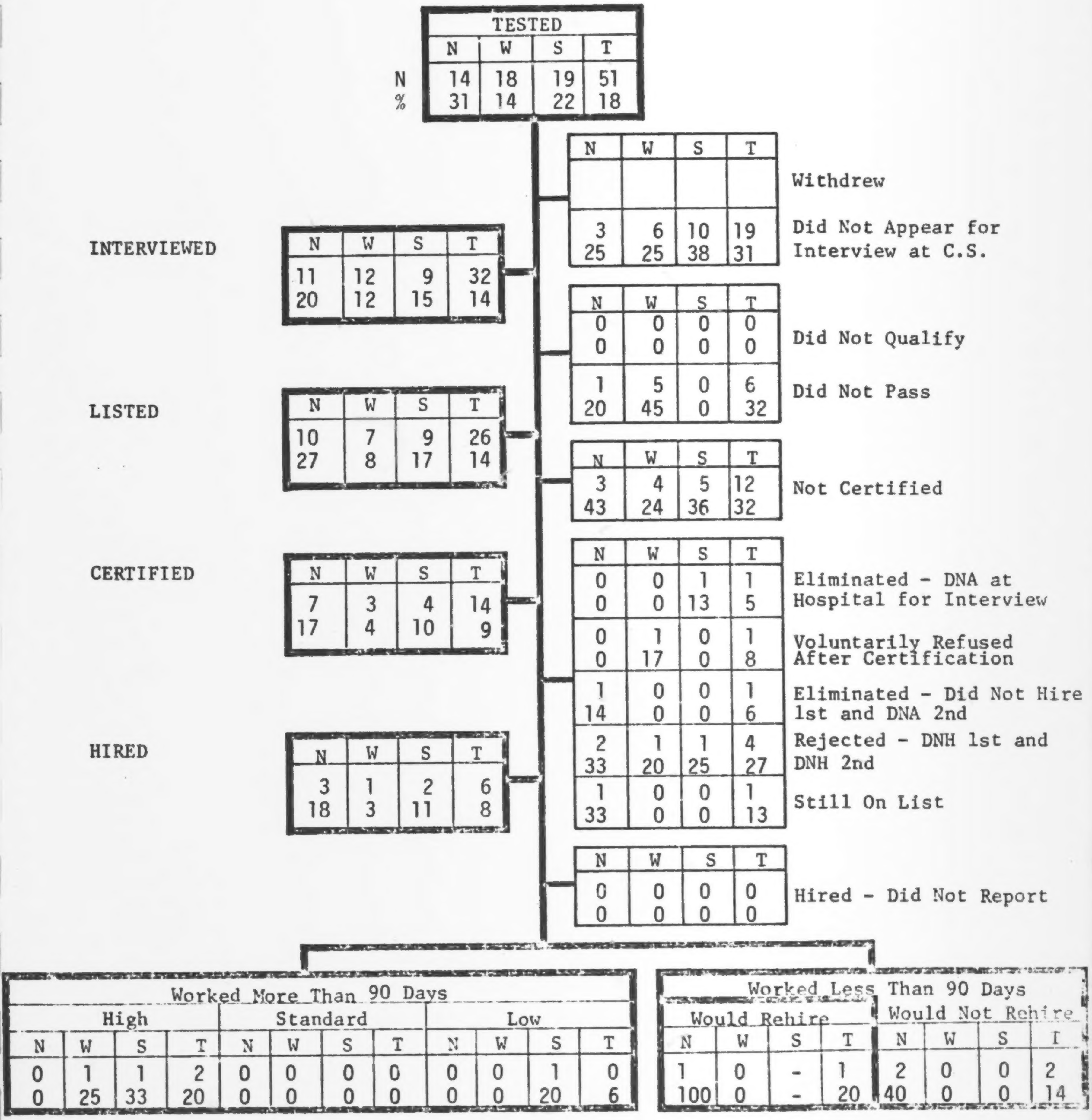
N	W	S	T	
0 0	4 67	1 100	5 63	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
2 67	1 25	1 33	4 40	4 100	3 38	6 86	13 68	3 100	7 88	4 80	14 88

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1 100	3 75	-	4 80	2 40	4 57	0 0	6 43

Graph 22. Length of Time in Denver by Selection Stage and Ethnic Group
(More Than 36 Months)

Violated Law (Yes) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	14	18	19	51
%	31	14	22	18

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	3 25	6 25	10 38	19 31

INTERVIEWED

N	W	S	T
11	12	9	32
20	12	15	14

	N	W	S	T
Did Not Qualify	0 0	0 0	0 0	0 0
Did Not Pass	1 20	5 45	0 0	6 32

LISTED

N	W	S	T
10	7	9	26
27	8	17	14

	N	W	S	T
Not Certified	3 43	4 24	5 36	12 32

CERTIFIED

N	W	S	T
7	3	4	14
17	4	10	9

	N	W	S	T
Eliminated - DNA at Hospital for Interview	0 0	0 0	1 13	1 5
Voluntarily Refused After Certification	0 0	1 17	0 0	1 8
Eliminated - Did Not Hire 1st and DNA 2nd	1 14	0 0	0 0	1 6
Rejected - DNH 1st and DNH 2nd	2 33	1 20	1 25	4 27
Still On List	1 33	0 0	0 0	1 13

HIRED

N	W	S	T
3	1	2	6
18	3	11	8

	N	W	S	T
Hired - Did Not Report	0 0	0 0	0 0	0 0

Worked More Than 90 Days

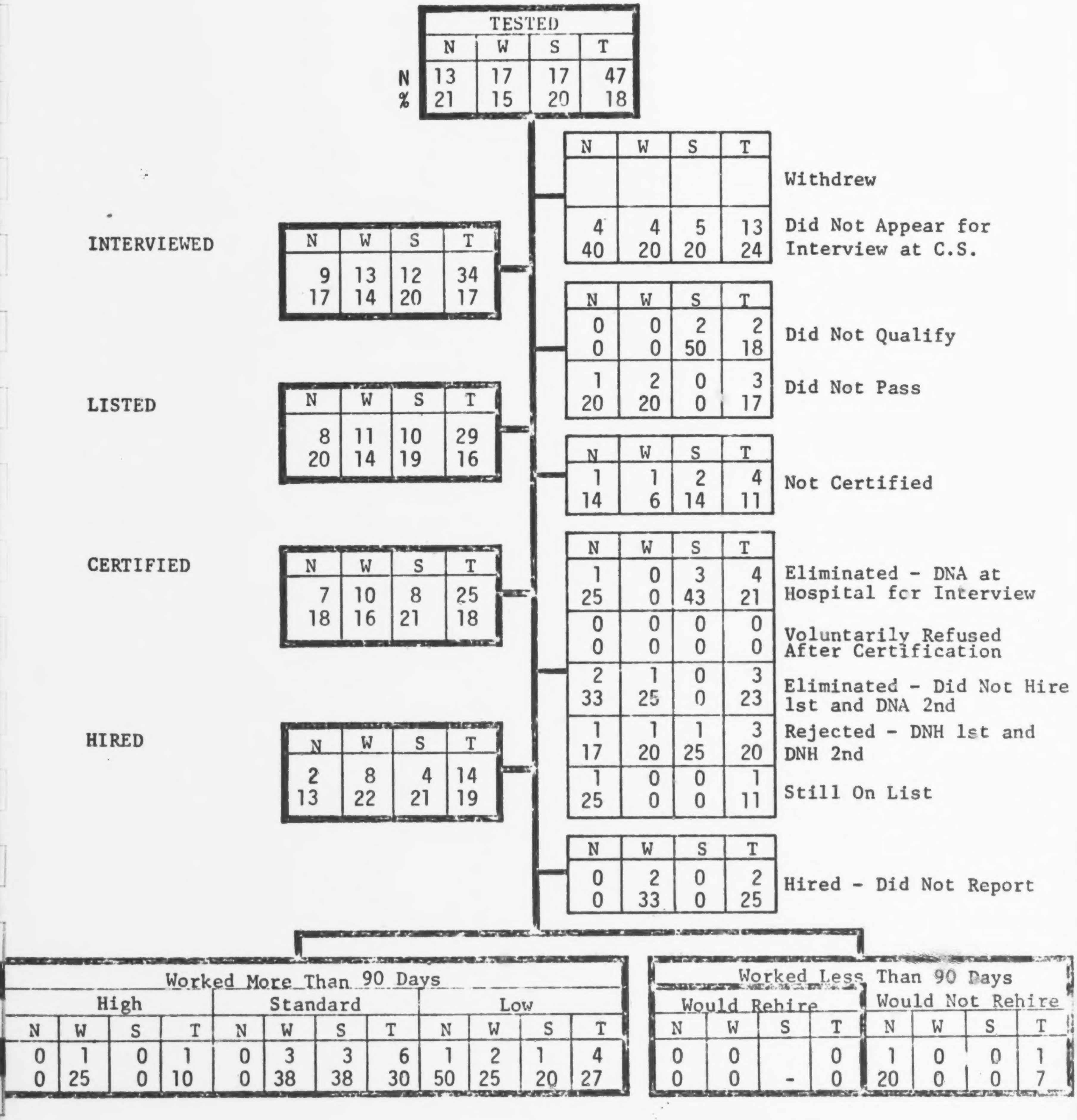
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	1	1	2	0	0	0	0	0	0	1	0
0	25	33	20	0	0	0	0	0	0	20	6

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1	0	-	1	2	0	0	2
100	0	-	20	40	0	0	14

Graph 23. Violated Law (Yes) by Selection Stage and Ethnic Group

Basis of Application (Friend) by Selection Stage and Ethnic Group



TESTED	N	W	S	T
N	13	17	17	47
%	21	15	20	18

	N	W	S	T
INTERVIEWED	9	13	12	34
	17	14	20	17
LISTED	8	11	10	29
	20	14	19	16
CERTIFIED	7	10	8	25
	18	16	21	18
HIRED	2	8	4	14
	13	22	21	19

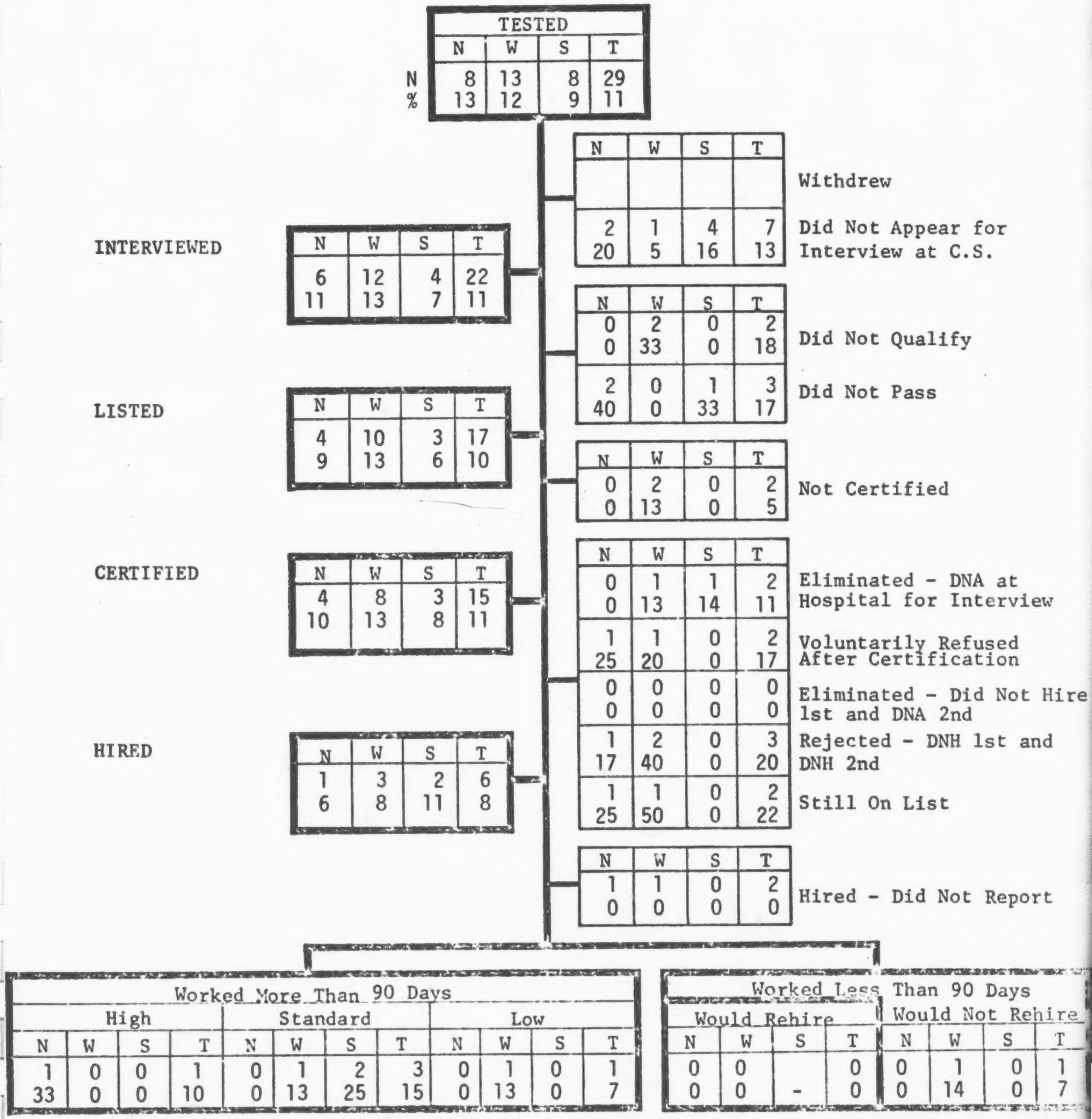
	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	4	4	5	13
	40	20	20	24
Did Not Qualify	0	0	2	2
	0	0	50	18
Did Not Pass	1	2	0	3
	20	20	0	17
Not Certified	1	1	2	4
	14	6	14	11
Eliminated - DNA at Hospital for Interview	1	0	3	4
	25	0	43	21
Voluntarily Refused After Certification	0	0	0	0
	0	0	0	0
Eliminated - Did Not Hire 1st and DNA 2nd	2	1	0	3
	33	25	0	23
Rejected - DNH 1st and DNH 2nd	1	1	1	3
	17	20	25	20
Still On List	1	0	0	1
	25	0	0	11
Hired - Did Not Report	0	2	0	2
	0	33	0	25

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	1	0	1	0	3	3	6	1	2	1	4
0	25	0	10	0	38	38	30	50	25	20	27

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	0		0	1	0	0	1
0	0	-	0	20	0	0	7

Graph 24. Basis of Application (Friend) by Selection Stage and Ethnic Group

Basis of Application (Notice Card) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	8	13	8	29
%	13	12	9	11

Withdrew / Did Not Appear for Interview at C.S.

N	W	S	T
2 20	1 5	4 16	7 13

INTERVIEWED

N	W	S	T
6 11	12 13	4 7	22 11

Did Not Qualify / Did Not Pass

N	W	S	T
0 0	2 33	0 0	2 18
2 40	0 0	1 33	3 17

LISTED

N	W	S	T
4 9	10 13	3 6	17 10

Not Certified

N	W	S	T
0 0	2 13	0 0	2 5

CERTIFIED

N	W	S	T
4 10	8 13	3 8	15 11

	N	W	S	T
Eliminated - DNA at Hospital for Interview	0 0	1 13	1 14	2 11
Voluntarily Refused After Certification	1 25	1 20	0 0	2 17
Eliminated - Did Not Hire 1st and DNA 2nd	0 0	0 0	0 0	0 0
Rejected - DNH 1st and DNH 2nd	1 17	2 40	0 0	3 20
Still On List	1 25	1 50	0 0	2 22

HIRED

N	W	S	T
1 6	3 8	2 11	6 8

Hired - Did Not Report

N	W	S	T
1 0	1 0	0 0	2 0

Worked More Than 90 Days

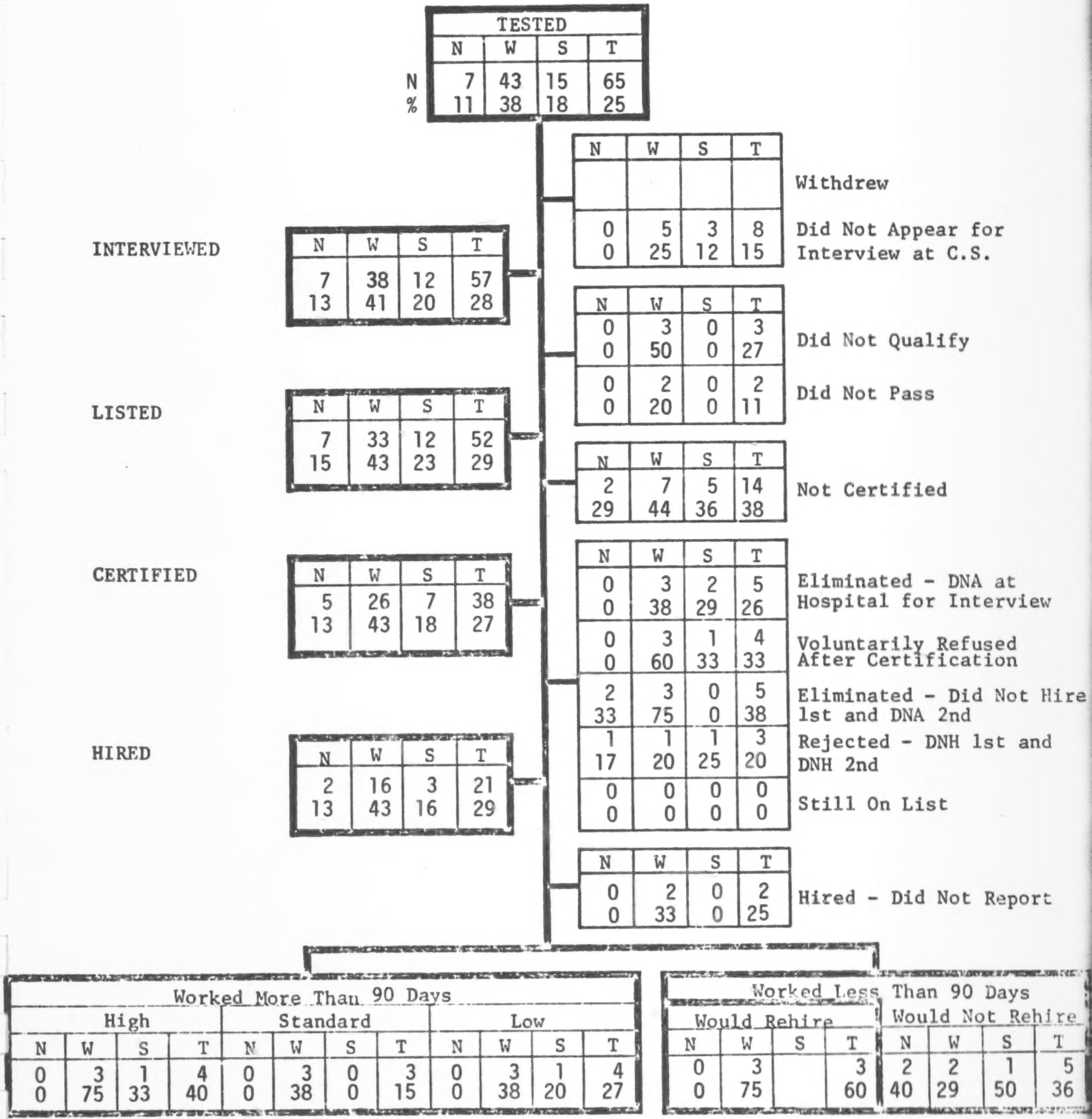
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
1 33	0 0	0 0	1 10	0 0	1 13	2 25	3 15	0 0	1 13	0 0	1 7

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	0 0	 -	0 0	0 0	1 14	0 0	1 7

Graph 25. Basis of Application (Notice Card) by Selection Stage and Ethnic Group

Basis of Application (Newspaper) by Selection Stage and Ethnic Group



TESTED

	N	W	S	T
N	7	43	15	65
%	11	38	18	25

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.	0 0	5 25	3 12	8 15

INTERVIEWED

N	W	S	T
7 13	38 41	12 20	57 28

	N	W	S	T
Did Not Qualify	0 0	3 50	0 0	3 27
Did Not Pass	0 0	2 20	0 0	2 11

LISTED

N	W	S	T
7 15	33 43	12 23	52 29

	N	W	S	T
Not Certified	2 29	7 44	5 36	14 38

CERTIFIED

N	W	S	T
5 13	26 43	7 18	38 27

	N	W	S	T
Eliminated - DNA at Hospital for Interview	0 0	3 38	2 29	5 26
Voluntarily Refused After Certification	0 0	3 60	1 33	4 33
Eliminated - Did Not Hire 1st and DNA 2nd	2 33	3 75	0 0	5 38
Rejected - DNH 1st and DNH 2nd	1 17	1 20	1 25	3 20
Still On List	0 0	0 0	0 0	0 0

HIRED

N	W	S	T
2 13	16 43	3 16	21 29

	N	W	S	T
Hired - Did Not Report	0 0	2 33	0 0	2 25

Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0 0	3 75	1 33	4 40	0 0	3 38	0 0	3 15	0 0	3 38	1 20	4 27

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	3 75		3 60	2 40	2 29	1 50	5 36

Graph 26. Basis of Application (Newspaper) by Selection Stage and Ethnic Group

A summary of the characteristics of individuals hired after the first or after the second interview in contrast to those not hired is shown in Table 1. Although the number of individuals hired on the second interview is small for all groups, several differences can be noted. In part, these differences could be the result of the selection process, or they could be the result of a change in the composition of the group which returned for the second interview. In other words, those who did not return may have been considerably different from those who did, thereby forcing differences in characteristics of those hired. Interestingly, the Whites hired on the second interview had higher interview ratings than those hired on the first interview, although they obtained consistently lower test scores.

In summary of the graphic representation of the selection process at the Career Service Authority of the City and County of Denver, some evidence was noted of a differential effect of the selection process on the three ethnic groups. Whereas Whites were not adversely affected by time delays or return interviews, the minority groups were. It was further noted that the selection process tended to make the applicants more homogeneous with respect to characteristics measured by tests not involved in the selection decisions. In addition, it was also noted that Whites tended to score higher than Spanish-surname personnel and Negroes on most of the tests administered at the time of application.

In contrast to the test scores, interview ratings given to the three groups were similar. Background characteristics of the three groups suggested that the population of Negro applicants may contain more individuals with high job performance potential than the other two groups in terms of percentage presently employed, interview ratings, increasingly

Table 1

Characteristics of Individuals Hired on First Interview, Second Interview and Those Not Hired

Characteristic		Negro	White	Spanish Surname	Total
Age	First	28.2 (14)	24.7 (32)	31.5 (16)	27.2 (62)
	Second	43.0 (3)	36.8 (5)	35.7 (3)	38.2 (11)
	Not Hired	29.1 (53)	28.9 (101)	28.2 (71)	28.7 (225)
Education	First	11.8	12.3	10.3	11.6
	Second	11.0	11.4	10.7	11.1
	Not Hired	11.1	11.7	9.9	11.0
Percent Female	First	64 (9)	29 (9)	38 (6)	39 (24)
	Second	67 (2)	40 (2)	100 (3)	64 (7)
	Not Hired	49 (26)	37 (37)	41 (29)	41 (92)
X-O Score	First	40.7	46.8	34.9	42.3
	Second	35.0	42.0	46.3	41.3
	Not Hired	35.1	38.8	36.8	37.3
$-¢ Score	First	23.0	23.9	20.7	22.8
	Second	19.0	22.0	26.7	24.9
	Not Hired	20.0	21.9	21.0	21.1
X-O $-¢ Total	First	63.7	69.8	55.6	64.7
	Second	54.0	64.0	73.0	63.7
	Not Hired	54.8	60.5	57.8	58.3
SRA	First	37.2	44.8	36.3	40.8
	Second	39.0	38.4	44.7	40.3
	Not Hired	37.1 (53)	41.8 (95)	39.2 (70)	39.8 (218)
Visual Memory	First	40.2	41.0	29.4	37.7
	Second	34.7	31.0	38.0	33.9
	Not Hired	32.1	37.5	33.1	34.8
Matrices	First	24.6	32.5	19.7	27.4
	Second	18.3	21.6	28.7	22.6
	Not Hired	23.3	30.1	25.1	27.0
Total Interview	First	26.1	25.5	24.1	25.2
	Second	20.0	34.0	18.3	25.9
	Not Hired	20.7 (28)	17.3 (46)	17.9 (34)	18.4 (108)
Ability	First	3.2 (13)	3.0 (28)	2.8 (15)	3.0 (56)
	Second	2.3 (3)	2.7 (3)	2.7 (3)	2.6 (9)
Performance	First	3.3 (13)	2.8 (28)	2.9 (15)	3.0 (56)
	Second	2.3 (3)	3.0 (3)	2.7 (3)	2.6 (9)

higher salary on successive jobs and length of time on last job, even though this group tended to score lower on most tests than the other two groups.

Performance Data by Ethnic Group

In the longitudinal phase of the present project merit ratings and supervisory rankings constituted the performance criteria. Merit ratings were available for 46 individuals and supervisory rankings were obtained for 65 persons. The difference in numbers is attributable to the length of time individuals had been employed when the project period was completed. In other words, a rating was recorded only if the individual had worked 90 days or longer, and a supervisory ranking was obtained only if the supervisor concerned felt that they had had sufficient time to review each attendant's performance accurately.

The two types of performance data are shown by ethnic group in Table 2. The F-values represent indices of the statistical significance of the differences among the three ethnic group means. In all comparisons made, no significant differences in performance were noted. This result parallels the job performance result reported for the cross sectional phase of the study. Clearly the evidence indicates that differences in job performance among the three ethnic groups are attributable to chance rather than to ethnic group membership.

Correlation Between Selection Data and Performance by Ethnic Group

Crucial to any study of the selection process is the extent to which job performance can be predicted from evidence available at the time of application. The extent to which such prediction would have been possible in the present project was examined (1) in terms of the

Table 2

Performance of Employed Attendants

	Ethnic Group			
Characteristic	Negro(10)	White(20)	Spanish Surname(16)	Total(46)
		Regular Merit Review		
Quantity (F=.382)	3.2	3.3	3.1	3.2
Quality (F=.134)	3.0	3.1	3.1	3.1
Reporting Habits (F=.384)	2.9	3.0	2.9	2.9
Overall Rating (F=.263)	3.0	3.2	3.1	3.1
		Research Ranking		
	Negro(16)	White(31)	S.Surname(18)	Total(65)
Ability (F=.213)	3.1	3.0	2.8	3.0
Performance (F=.320)	3.1	2.9	2.8	3.0
Ability Categories	Frequency			Total
5	2	3	1	6
4	3	8	2	13
3	6	10	9	25
2	3	8	4	15
1	2	3	2	7
Performance Categories	Frequency			Total
5	2	3	1	6
4	5	6	2	13
3	5	12	9	26
2	1	8	5	14
1	3	3	1	7

coefficient of correlation between selection variables and performance of those ultimately hired and (2) in terms of the kinds of job performers who would have been eliminated if cutting score at various points in the test score distributions had been used.

In Table 3 are shown the zero order coefficients of correlation between various predictions and the supervisory rankings with respect to ability to perform the job and actual performance. (Because of the very limited dispersion within the merit rating distributions, they were eliminated from further consideration as criteria of performance against which to compare predictor values.) Inspection of the predictors shown in Table 3 reveals that by far the largest number of significant coefficients of correlation occurred within the Negro distribution.

To assess the influence of age and education on test performance in relation to job performance, age and education were partialed out for several of the variables as shown in Table 4. Although inspection of Table 4 reveals that the magnitude of the predictor-performance relationship was reduced slightly as the result of controlling age and education, the results did not change appreciably.

To determine the possible advantage of combining several predictor variables into a multiple prediction scheme, the stepwise regression analyses reported in Tables 5 and 6 were computed. Here it can be seen that, when the variable yielding largest zero order coefficient with the criterion is used as the first predictor in the scheme and the others are systematically combined with it, few significant increases in prediction resulted. Although several tests correlated significantly with performance for one or more ethnic groups, available evidence does not support using them in combination.

Table 3

Zero Order Coefficients of Correlation Between Twenty-Nine Predictors and Two Criteria for Three Ethnic Groups

Predictor	Ability to Perform				Performance			
	Negro(16)	White(32)	Spanish(18)	Total(66)	Negro(16)	White(32)	Spanish(18)	Total(66)
Age*	-.38	-.04	-.03	-.13	-.49*	.07	.20	-.03
Education*	.37	.14	.52*	.31*	.23	-.16	.33	.08
X-0 Correct*	.67*	-.04	.50*	.29*	.52*	-.03	.33	.19
X-0 Wrong	.15	.25	-.20	.01	.17	.22	.05	.08
X-0 Attempted	.71*	.15	.47*	.40*	.56*	.14	.42	.31
$-¢ Correct	.65*	.04	.47*	.33*	.74*	-.02	.27	.26*
$-¢ Wrong	-.33	.16	-.24	-.06	-.22	.19	-.16	-.01
$-¢ Attempted	.54*	.13	.46	.34*	.67*	.09	.25	.28*
X-0 $-¢ Correct	.75*	.05	.51*	.37*	.67*	.05	.32	.27*
SRA Correct	.12	.31	.32	.27*	.06	.23	.22	.14
X-0 $-¢ Wrong	.73*	.16	.50*	.40*	.68*	.14	.38	.32*
Memory Correct	.37	.16	.15	.20	.33	.10	-.07	.11
Memory Wrong	-.53*	-.09	.10	-.13	-.40	-.04	-.02	-.10
Memory Attempted	.12	.11	.15	.12	.15	.08	-.06	.07
Matrices Correct	.66*	.27	.41	.37*	.65*	.22	.29	.28*
Matrices Wrong	-.55*	-.23	-.46	-.38*	-.43	-.24	-.46*	-.33*
Matrices Attempted	-.10	.16	-.02	.07	.08	.06	-.17	.01
Health Experience	.22	.17	-.10	.12	.23	.11	-.16	.06
Interview Area 1	.42	.25	-.35	.15	.44	.22	-.28	.17
Interview Area 2	.33	-.03	.46	.18	.38	-.02	.35	.18
Interview Area 3	.35	.07	-.03	.12	.48	.02	.04	.16
Interview Area 4	.24	.19	.12	.15	.18	.21	.23	.19
Total Interview	.50*	.18	.10	.24*	.51*	.17	.17	.29*
Length Last Job	-.33	-.19	.09	-.17	-.40	-.13	.25	-.12
Money Last Job	-.13	-.03	.33	.02	-.29	.05	.23	-.00
Status Last Job	-.00	-.25	-.18	-.17	-.14	.08	-.20	-.06
Length Next Last Job	.10	-.07	.32	.03	.04	-.01	.43	.08
Money Next Last Job	.00	-.16	-.06	-.10	-.03	-.07	.06	-.06
Time in Denver	-.61*	-.12	-.49*	-.29*	-.52*	-.22	-.49*	-.33*

*Significant at .05 level or beyond

Table 4

Second Order Partial Coefficients of Correlation Between Predictors and Criteria with Age and Education Constant

	Ability				Performance			
Predictor	N(16)	W(32)	SS(18)	T(66)	N(16)	W(32)	SS(18)	T(66)
X-0 Correct	.59*	-.04	.13	.17	.46*	-.02	.08	.18
X-0 Attempted	.68*	.15	-.02	.29*	.58*	.15	.09	.30*
$-¢ Correct	.57*	.02	.07	.23*	.69*	.02	-.03	.26*
$-¢ Attempted	.48*	.12	.05	.25*	.64*	.13	-.07	.28*
X-0 $-¢ Correct	.68*	.04	.13	.26*	.62*	.07	.05	.28*
SRA	-.11	.07	.07	.06	-.21	.17	.13	.10
X-0 $-¢ Attempted	.66*	.15	.00	.30*	.66*	.16	.03	.33*
Matrices Correct	.55*	.27	.25	.28*	.57*	.32	.28	.31*
Matrices Attempted	-.41	-.23	-.14	-.29*	-.31	-.34	-.28	-.33*
Total Interview	.42	.23	-.11	.24*	.45*	.13	.17	.27*
Time in Denver	-.54*	-.15	-.41	-.28*	.51*	-.21	-.46	-.31*

*Significant at .05 level or beyond

Table 5

Stepwise Regression of Predictor Variables and the Criterion - Ability to Perform

Sample	Variable	Multiple R	Number of Predictors	F for Increase
Negro (16)	X-0 $-¢ Correct	.75	1	17.78
	Time in Denver	.79	2	2.28
	Total Interview Score	.82	3	1.75
	SRA Score	.84	4	.89
	X-0 $-¢ Attempted	.85	5	1.09
	Education	.88	6	1.98
	Matrices Wrong	.89	7	.85
White (32)	Matrices Correct	.26	1	2.26
	Total Interview Score	.37	2	2.14
	X-0 Correct	.46	3	2.93
	X-0 Attempted	.56	4	4.08
	$-¢ Correct	.62	5	2.89
	Education	.66	6	1.97
	SRA Score	.67	7	.43
Spanish Surname (18)	Education	.52	1	6.00
	Age	.64	2	3.32
	Time in Denver	.71	3	2.80
	Matrices Correct	.74	4	1.18
	$-¢ Attempted	.76	5	.71
	X-0 Correct	.79	6	1.40
	SRA Correct	.80	7	.69
Total (66)	X-0 $-¢ Attempted	.39	1	11.69
	Time in Denver	.44	2	3.39
	Total Interview Score	.47	3	1.99
	Matrices Correct	.50	4	1.95
	Age	.51	5	.95
	Education	.52	6	1.26
	X-0 Correct	.53	7	.58

Table 6

Stepwise Regression of Predictor Variables and the Criterion - Performance

Sample	Variable	Multiple R	Number of Predictors	F for Increase
Negro (16)	$-¢ Correct	.74	1	17.20
	Time in Denver	.78	2	2.18
	Age	.82	3	2.28
	Total Interview	.84	4	1.36
	Education	.86	5	.85
	X-0 Attempted	.87	6	.80
	X-0 $-¢ Correct	.90	7	2.71
White (32)	Matrices Wrong	-.24	1	1.89
	Total Interview	.34	2	1.82
	X-0 Correct	.41	3	1.89
	X-0 Attempted	.52	4	3.51
	$-¢ Correct	.60	5	3.64
	$-¢ Attempted	.64	6	2.01
	Time in Denver	.67	7	2.01
Spanish Surname (18)	Matrices Wrong	-.46	1	4.34
	Time in Denver	.59	2	3.05
	Age	.68	3	3.18
	Education	.73	4	1.85
	$-¢ Attempted	.75	5	.87
	Matrices Correct	.80	6	2.47
	X-0 Correct	.84	7	2.06
Total (66)	Matrices Wrong	-.33	1	7.62
	Total Interview	.42	2	5.45
	Time in Denver	.47	3	3.17
	Age	.48	4	1.20
	$-¢ Attempted	.51	5	1.85
	$-¢ Correct	.52	6	1.11
	Matrices Correct	.53	7	.54

Frequency Distributions and Performance by Ethnic Group

To provide greater insight into the nature of the relationships between the predictor variables and the two research criteria of performance, two-way frequency distributions of score and criterion were tabulated. Whereas the distributions reflect the same general type of information as do coefficients of correlation, such distributions are especially meaningful in assessing the influence of cutting score on selection procedures. The frequency distributions for age, educational level, X-0 score, $-¢ score, X-0 $-¢ score, SRA score, Matrices score, interview rating, and time in Denver are shown in Tables 7 to 15.

Inspection of these tables indicates that, in general, there is little evidence for retaining educational level as a requirement for the hospital attendant job. Of the approximately 10 per cent of the employed individuals who scored below the score of 30 on the SRA Non Verbal Test, four were ranked in category 4, two were ranked 3, and one was ranked in category 2 of job performance. If a cutting score of 49 on the X-0 $-¢ test had been employed, four persons would have been eliminated and all were ranked 3 or below. If a cutting score of 17 on the Matrices test had been employed, eleven would have been eliminated and seven would have been in performance category 2 or below. Inspection of the time in Denver distribution reveals that most of the relationship was contributed by a relatively few individuals who had lived in Denver for less than six months who were ranked in performance categories 3 and above.

The importance of demonstrating relationships between selection test score and performance is clearly shown in the present project. The use of such relationships, when they do exist, will be discussed in the section on Implications.

Table 7

Distribution of Age by Selection Stage and Performance Level

	Selection Stage				Ability					Performance				
Age	Tested	Inter-viewed	Listed	Certified	1	2	3	4	5	1	2	3	4	5
		(Negro)												
63-68	-	-	-	-										
57-62	1	-	-	-	0	0	0	0	0	0	0	0	0	0
51-56	1	1	1	1	0	0	0	0	0	0	0	0	0	0
45-50	4	3	2	2	1	0	1	0	0	0	0	1	0	0
39-44	10	5	4	4	0	1	0	1	0	1	0	0	1	0
33-40	11	8	6	6	0	0	1	0	0	1	0	1	0	0
27-32	15	13	13	11	0	2	3	1	0	0	1	3	2	0
21-26	16	14	14	11	1	0	0	1	1	1	0	0	1	1
15-20	16	12	10	7	0	0	1	0	1	0	0	0	1	1
		(White)												
63-68	1	-	-	-	0	0	0	0	0	0	0	0	0	0
57-62	4	2	-	-	0	0	0	0	0	0	0	0	0	0
51-56	8	6	5	3	0	0	1	0	0	0	0	0	1	0
45-50	7	3	3	1	0	0	0	0	0	0	0	0	0	0
39-44	17	14	11	9	0	1	3	1	0	0	1	3	1	0
33-40	5	4	2	2	0	0	1	0	0	0	0	0	1	0
27-32	8	8	6	5	1	1	0	0	0	1	1	0	0	0
21-26	24	18	17	14	1	2	1	3	0	1	3	1	2	0
15-20	66	46	40	33	1	4	4	3	3	1	3	7	1	4
		(Spanish)												
63-68	-	-	-	-										
57-62	1	-	-	-	0	0	0	0	0	0	0	0	0	0
51-56	8	3	2	2	0	1	1	0	0	0	0	2	0	0
45-50	7	5	5	4	0	0	2	0	0	0	1	2	0	0
39-44	4	4	3	3	1	0	1	0	0	0	0	1	0	0
33-40	5	4	4	3	0	1	1	0	1	0	1	1	0	1
27-32	19	12	9	5	0	0	0	1	0	0	0	0	1	0
21-26	17	13	12	9	0	0	1	2	1	0	1	2	1	0
15-20	31	22	19	14	1	1	2	0	0	1	2	1	0	0
9-14	1	-	-	-										

Table 8

Distribution of Last Grade Completed by Selection Stage and Performance Level

Grade	Tested	Inter-viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
			(Negro)											
15	2	2	2	2	0	0	0	0	1	0	0	0	0	1
14	-	-	-	-	0	0	0	0	0	0	0	0	0	0
13	3	3	3	3	0	1	0	1	0	0	1	0	1	0
12	35	26	24	19	0	2	3	0	1	1	0	3	1	1
11	16	13	13	12	1	0	2	2	0	1	0	2	2	0
10	10	8	6	5	1	0	0	0	0	1	0	0	0	0
9	2	-	-	-	0	0	0	0	0	0	0	0	0	0
8	4	3	1	1	0	0	1	0	0	0	0	0	1	0
7	1	-	-	-	0	0	0	0	0	0	0	0	0	0
6	1	-	-	-	0	0	0	0	0	0	0	0	0	0
			(White)											
16	5	3	1	1	0	0	1	0	0	0	1	0	0	0
15	3	2	2	2	0	0	0	1	0	0	0	0	1	0
14	7	6	6	4	0	1	0	2	0	0	2	0	1	0
13	17	12	10	9	2	2	0	2	0	2	3	1	0	0
12	66	47	39	30	1	4	6	2	3	1	2	9	1	3
11	11	8	7	7	0	0	1	0	0	0	0	0	1	0
10	19	13	12	7	0	0	1	0	0	0	0	0	1	0
9	4	3	2	2	0	1	0	0	0	0	0	1	0	0
8	7	6	5	5	0	0	1	0	0	0	0	1	0	0
7	1	1	0	0	0	0	0	0	0	0	0	0	0	0
			(Spanish)											
13	2	1	1	1	0	0	1	0	0	0	0	1	0	0
12	25	19	17	12	0	1	0	2	1	0	1	0	2	1
11	16	10	9	6	0	2	1	0	0	0	2	1	0	0
10	20	14	11	10	1	0	5	0	0	1	1	4	0	0
9	9	6	6	4	0	0	1	0	0	0	0	1	0	0
8	10	6	6	4	0	1	1	0	0	0	0	2	0	0
7	7	5	3	2	0	0	0	0	0	0	0	0	0	0
6	-	-	-	-	0	0	0	0	0	0	0	0	0	0
5	3	2	1	1	1	0	0	0	0	0	1	0	0	0
4	-	-	-	-	0	0	0	0	0	0	0	0	0	0
3	1	-	-	-	0	0	0	0	0	0	0	0	0	0

Table 9

Distribution of X-0 Score by Selection Stage and Performance Level

X-0 Score	Tested	Inter-viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
		(Negro)												
50-59	9	7	7	5	0	0	1	0	1	0	0	1	0	1
40-49	21	16	16	15	0	2	2	2	1	1	1	1	3	1
30-39	25	20	17	11	0	1	2	1	0	0	0	1	2	0
20-29	14	8	6	6	2	0	0	0	0	2	0	1	0	0
10-19	3	2	1	1	0	0	0	0	0	0	0	0	0	0
0-9	3	2	2	2	0	0	0	0	0	0	0	0	0	0
		(White)												
50-59	28	21	20	15	2	2	1	3	1	1	1	3	2	1
40-49	54	41	35	29	0	4	6	4	1	1	4	6	2	1
30-39	38	30	26	21	1	2	3	1	1	1	3	2	1	1
20-29	13	5	1	1	0	0	0	0	0	0	0	0	0	0
10-19	6	4	2	1	0	0	0	0	0	0	0	0	0	0
0-9	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		(Spanish)												
50-59	8	5	5	3	0	1	0	0	0	0	1	0	0	0
40-49	30	24	20	15	0	1	4	2	1	0	1	4	2	1
30-39	31	17	15	13	1	1	4	0	0	1	2	3	0	0
20-29	17	14	12	7	0	1	0	0	0	0	0	1	0	0
10-19	5	1	1	1	0	0	0	0	0	0	0	0	0	0
0-9	1	1	1	1	1	0	0	0	0	0	1	0	0	0

Table 10

Distribution of $-¢ Score by Selection Stage and Performance Level

$-¢ Score	Tested	Inter- viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
		(Negro)												
30-34	2	2	2	2	0	0	0	0	0	0	0	0	0	0
25-29	18	15	15	12	0	1	1	1	1	0	0	1	2	1
20-24	26	17	16	14	0	1	4	1	1	0	1	2	3	1
15-19	13	10	9	7	1	1	0	1	0	2	0	1	0	0
10-14	11	9	4	5	1	0	0	0	0	1	0	0	0	0
5-9	1	-	-	-	0	0	0	0	0	0	0	0	0	0
0-4	3	2	2	2	0	0	0	0	0	0	0	0	0	0
		(White)												
30-34	5	3	3	2	0	1	0	1	0	0	1	1	0	0
25-29	42	34	30	25	2	3	2	5	2	2	3	4	3	2
20-24	62	41	35	27	1	1	6	1	0	1	1	5	2	0
15-19	19	13	10	9	0	3	2	0	1	0	3	2	0	1
10-14	8	8	6	4	0	0	0	0	0	0	0	0	0	0
5-9	3	2	-	-	0	0	0	0	0	0	0	0	0	0
0-4	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		(Spanish)												
30-34	2	2	2	2	0	1	1	0	0	0	1	1	0	0
25-29	23	14	13	7	0	0	2	0	1	0	0	2	0	1
20-24	41	29	26	19	1	2	4	2	0	1	2	4	2	0
15-19	16	10	9	8	0	0	2	0	0	0	1	1	0	0
10-14	8	6	3	3	0	1	0	0	0	0	0	1	0	0
5-9	-	-	-	-	0	0	0	0	0	0	0	0	0	0
0-4	2	1	1	1	1	0	0	0	0	0	1	0	0	0

Table 11

Distribution of X-O $-¢ Score by Selection Stage and Performance Level

SRA Score	Tested	Inter-viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
			(Negro)											
80-89	3	3	3	2	0	0	0	0	1	0	0	0	0	1
70-79	14	9	9	7	0	0	1	2	0	0	0	1	2	0
60-69	18	15	15	14	0	2	3	1	1	1	1	1	3	1
50-59	19	15	13	10	0	0	2	0	0	0	0	2	0	0
40-49	7	3	2	2	0	0	0	0	0	0	0	0	0	0
30-39	8	8	5	5	2	0	0	0	0	2	0	0	0	0
20-29	1	-	-	-	0	0	0	0	0	0	0	0	0	0
10-19	2	-	-	-	0	0	0	0	0	0	0	0	0	0
0-9	2	2	2	2	0	0	0	0	0	0	0	0	0	0
			(White)											
80-89	14	11	10	8	0	1	0	3	0	0	0	2	2	0
70-79	37	28	26	22	2	4	5	2	2	2	5	6	0	2
60-69	34	23	19	14	0	1	2	1	0	0	0	2	2	0
50-59	30	24	20	17	1	2	3	1	1	1	2	1	1	1
40-49	16	8	6	5	0	0	0	0	0	0	0	0	0	0
30-39	4	3	1	-	0	0	0	0	0	0	0	0	0	0
20-29	4	3	1	1	0	0	0	0	0	0	0	0	0	0
10-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			(Spanish)											
80-89	3	3	3	1	0	1	0	0	0	0	0	0	0	0
70-79	19	13	12	9	0	1	1	1	1	0	0	2	1	1
60-69	24	16	13	10	0	0	1	1	0	0	1	0	1	0
50-59	23	14	13	11	1	0	2	0	0	1	1	1	0	0
40-49	14	11	10	6	0	0	0	0	0	0	0	0	0	0
30-39	6	3	1	1	0	1	0	0	0	0	0	1	0	0
20-29	1	1	1	1	0	0	0	0	0	0	0	0	0	0
10-19	1	-	-	-	0	0	0	0	0	0	0	0	0	0
0-9	1	1	1	1	1	0	0	0	0	0	1	0	0	0

Table 12

Distribution of SRA Score by Selection Stage and Performance Level

SRA		Inter-			Ability					Performance				
Score	Tested	viewed	Listed	Certified	1	2	3	4	5	1	2	3	4	5
		(Negro)												
54-50	2	2	2	1	0	0	0	0	1	0	0	0	0	1
48-53	10	9	9	7	0	0	0	1	1	0	0	0	1	1
42-47	15	11	11	8	0	1	1	0	0	1	0	1	0	0
36-41	18	12	11	11	1	2	1	0	0	1	1	2	0	0
30-35	13	9	8	7	1	0	1	0	0	1	0	1	0	0
24-29	7	3	3	3	0	0	1	1	0	0	0	0	2	0
18-23	6	6	3	3	0	0	0	0	0	0	0	0	0	0
12-17	-	-	-	-	0	0	0	0	0	0	0	0	0	0
6-11	2	2	1	1	0	0	0	0	0	0	0	0	0	0
0-5	1	1	1	1	0	0	0	1	0	0	0	0	1	0
		(White)												
54-59	5	5	4	4	0	1	1	0	1	0	1	1	0	1
48-53	29	20	18	13	0	2	0	3	1	0	2	1	1	0
42-47	51	41	36	30	2	2	6	3	1	2	2	7	1	0
36-41	24	14	11	7	1	2	1	0	0	1	1	2	0	0
30-35	15	10	7	6	0	1	0	0	0	0	0	1	0	0
24-29	4	3	2	2	0	0	1	0	0	0	0	0	1	0
18-23	2	2	1	1	0	0	0	0	0	0	0	0	0	0
12-17	2	1	1	1	0	0	0	0	0	0	0	0	0	0
6-11	-	-	-	-	0	0	0	0	0	0	0	0	0	0
0-5	1	1	1	-	0	0	0	0	0	0	0	0	0	0
		(Spanish)												
54-59	-	-	-	-	0	0	0	0	0	0	0	0	0	0
48-53	11	6	6	4	0	1	2	0	0	0	1	2	0	0
42-47	21	16	16	11	0	1	0	1	0	0	1	0	1	0
36-41	33	21	16	10	0	1	1	0	1	0	0	2	0	1
30-35	18	12	11	11	1	0	3	0	0	1	1	2	0	0
24-29	5	5	3	2	0	1	0	0	0	0	0	1	0	0
18-23	3	3	2	2	1	1	0	0	0	0	1	1	0	0
12-17	1	-	-	-	0	0	0	0	0	0	0	0	0	0
6-11	-	-	-	-	0	0	0	0	0	0	0	0	0	0
0-5	-	-	-	-	0	0	0	0	0	0	0	0	0	0

Table 13

Distribution of Matrices Score by Selection Stage and Performance Level

Matrices Score	Tested	Inter-viewed	Listed	Certified	Ability 1	2	3	4	5	Performance 1	2	3	4	5
		(Negro)												
48-53														
42-47	1	1	1	0	0	0	0	0	0	0	0	0	0	0
36-41	4	4	4	3	0	0	0	0	1	0	0	0	0	1
30-35	14	9	9	6	0	0	1	1	1	0	0	0	1	1
24-29	18	15	13	11	0	1	3	1	0	1	0	0	3	0
18-23	14	12	12	12	0	2	1	1	0	1	1	3	1	0
12-17	11	6	5	5	2	0	1	0	0	2	0	1	0	0
6-11	12	8	5	5	0	0	0	0	0	0	0	1	0	0
		(White)												
48-53	5	3	1	1	0	0	0	0	0	0	0	0	0	0
42-47	19	15	15	11	1	2	1	2	1	1	2	2	1	2
36-41	21	15	12	12	0	0	2	3	1	0	1	2	2	0
30-35	31	20	18	12	1	3	1	1	0	1	1	0	4	1
24-29	27	19	16	13	1	0	2	1	1	1	0	2	1	0
18-12	16	11	8	7	0	1	2	0	0	0	1	2	0	0
12-17	17	14	11	9	0	2	2	0	0	0	3	0	1	0
6-11	4	4	3	2	0	0	0	0	0	0	0	0	0	0
0-5	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		(Spanish)												
48-53														
42-47	3	2	2	1	0	1	0	0	0	0	1	0	0	0
36-41	12	8	6	4	0	0	0	1	0	0	0	0	1	0
30-35	14	11	10	6	0	0	2	1	0	0	0	2	1	0
24-29	20	13	12	7	0	0	2	0	1	0	0	2	0	1
18-23	16	7	7	7	1	0	1	0	0	1	1	0	0	0
12-17	9	[illegible]	5	5	0	2	0	0	0	0	1	1	0	0
6-11	13	12	9	8	1	0	0	0	0	0	1	0	0	0
0-5	3	1	1	1	0	0	1	0	0	0	0	1	0	0

Table 14

Distribution of Total Interview Ratings by Selection Stage and Performance Level

Interview Rating	Tested	Inter-viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
		(Negro)												
45	3	3	3	3	0	0	1	1	0	0	0	1	0	0
40	1	1	1	1	0	0	0	0	0	0	0	0	0	0
35		-	-	-	0	0	0	0	0	0	0	0	0	0
30	5	5	5	5	1	1	0	1	1	0	1	0	1	1
25	13	13	13	13	1	1	2	0	1	0	0	2	1	1
20	13	13	13	13	0	0	3	1	0	0	0	2	2	0
15	5	5	5	5	0	0	0	0	0	1	0	0	0	0
10	9	9	9	9	1	1	0	0	0	2	0	0	0	0
5					0	0	0	0	0	0	0	0	0	0
0	-	-	-	-	0	0	0	0	0	0	0	0	0	0
		(White)												
45	2	2	2	2	0	0	0	0	0	0	0	0	0	0
40	1	1	1	0	0	0	0	0	0	0	0	0	0	0
35	9	9	9	9	0	1	2	3	1	3	1	2	3	1
30	13	13	12	12	2	1	3	2	1	0	2	3	1	1
25	6	6	6	6	0	1	1	0	1	0	0	2	0	1
20	20	20	20	16	0	2	2	1	0	0	4	0	1	0
15	18	18	18	15	1	3	1	0	0	0	1	3	0	0
10	14	14	14	6	0	0	1	1	0	0	0	2	0	0
5	1	1	1	1	0	0	0	0	0	0	0	0	0	0
0	1	1	1	0	0	0	0	0	0	0	0	0	0	0
		(Spanish)												
45	-	-	-	-	0	0	0	0	0	0	0	0	0	0
40	-	-	-	-	0	0	0	0	0	0	0	0	0	0
35	3	3	3	3	0	1	0	1	0	0	0	1	1	0
30	7	7	5	5	0	1	1	1	0	0	0	2	1	0
25	10	10	10	8	1	0	3	0	0	1	1	2	0	0
20	12	12	12	11	0	2	3	0	0	0	3	2	0	0
15	14	14	14	6	0	0	2	0	1	0	0	2	0	1
10	4	4	4	4	1	0	0	0	0	0	1	0	0	0
5	6	6	6	3	0	0	0	0	0	0	0	0	0	0
0	-	-	-	-	0	0	0	0	0	0	0	0	0	0

Table 15

Time in Denver by Selection Stage and Performance Level

Time in Denver	Tested	Inter-viewed	Listed	Certified	Ability					Performance				
					1	2	3	4	5	1	2	3	4	5
			(Negro)											
More than 36 mo.	42	34	30	25	2	3	6	0	1	3	1	5	2	1
24-35 mo.	5	5	5	3	0	0	0	1	0	0	0	0	1	0
12-23 mo.	3	3	2	2	0	0	0	1	0	0	0	0	1	0
6-11 mo.	2	1	1	1	0	0	0	1	0	0	0	0	1	0
Less than 6 mo.	10	9	8	7	0	0	0	0	1	0	0	0	0	1
			(White)											
More than 36 mo.	81	64	52	39	1	7	3	5	2	1	7	5	3	2
24-35 mo.	2	1	1	-	0	0	0	0	0	0	0	0	0	0
12-23 mo.	5	5	4	3	1	0	1	0	0	1	0	1	0	0
6-11 mo.	3	1	1	1	0	1	0	0	0	0	0	1	0	0
Less than 6 mo.	25	21	19	17	1	0	2	2	1	1	0	2	2	1
			(Spanish)											
More than 36 mo.	62	41	35	28	1	3	6	1	0	1	3	6	1	0
24-35 mo.	1	1	1	-	0	0	0	0	0	0	0	0	0	0
12-23 mo.	5	3	3	3	0	0	1	0	0	0	0	1	0	0
6-11 mo.	1	1	1	1	0	0	1	0	0	0	1	0	0	0
Less than 6 mo.	11	9	8	5	0	1	0	1	1	0	0	1	1	1

IMPLICATIONS

Whereas the earlier sections of this report are repleat with specific findings from the two-year research project, the report would be incomplete without an attempt to integrate these findings into a meaningful theoretical model on which to base day-to-day practices. Such a model should serve to bridge the gap which frequently exists between research, on the one hand, and actual personnel practices on the other.

As a first step in tying together the various findings, the three more salient ones will be summarized. These will then be combined into an overall explanation of the situation, and suggested practices will then be formulated.

Salient Findings

In general, the three more pertinent findings as related to original hypotheses were as follows:

1. Job performance was comparable for the three ethnic groups included in the present project. The present project involved detailed study of performance across a variety of job classes. The present project also involved detailed analyses of a variety of criteria of job performance. In addition, the project involved two phases, a cross-sectional phase including individuals presently on the job at the time the project was initiated, and a longitudinal phase wherein the progress of applicants was followed for a period of several months after hire. In all instances, no evidence of significant differences in job performance among ethnic groups was noted. This finding applied to both research criteria defined for this project only, as well as to merit ratings and personnel criteria involved in the normal personnel administration process.

For purposes of illustrating this finding, the job performance variable will be graphed as three identical normal distributions of observations superimposed along the vertical axis of a two-way distribution as follows (Figure 1):

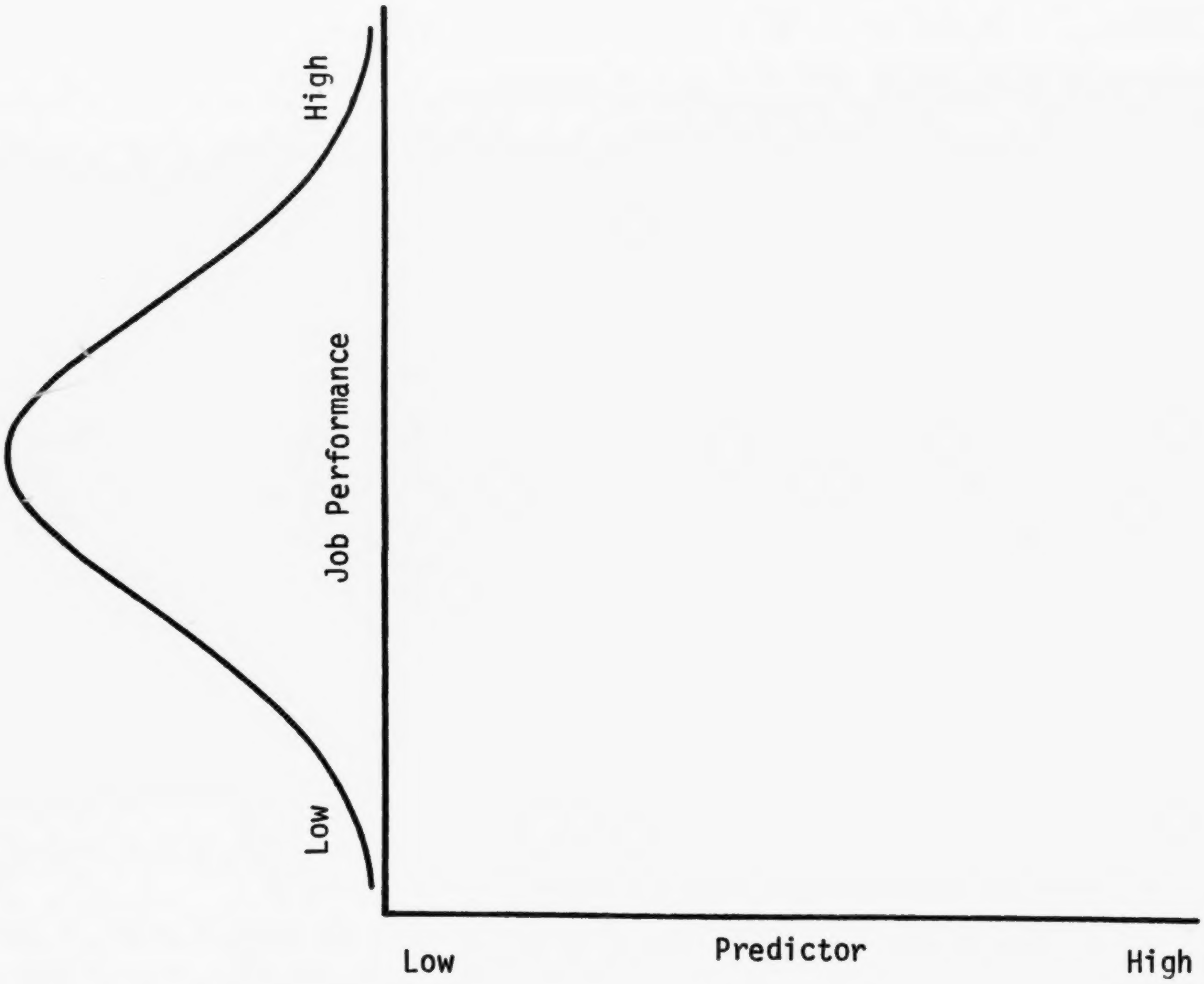


Figure 1. Comparable Job Performance for Three Ethnic Groups

2. In the majority of the selection tests administered throughout the present project, Whites scored highest, Spanish-surname personnel next, and Negroes scored lowest. This tended to be true for verbal material, perceptual discrimination, abstract reasoning, and to a lesser extent, oral

and visual memory. It should be noted, of course, that there was considerable overlapping among all the distributions and the differences noted were based primarily on measures of the central position of the distributions.

Graphically, this finding can be illustrated by erecting three normal curves below the baseline of a two-way distribution (Figure 2):

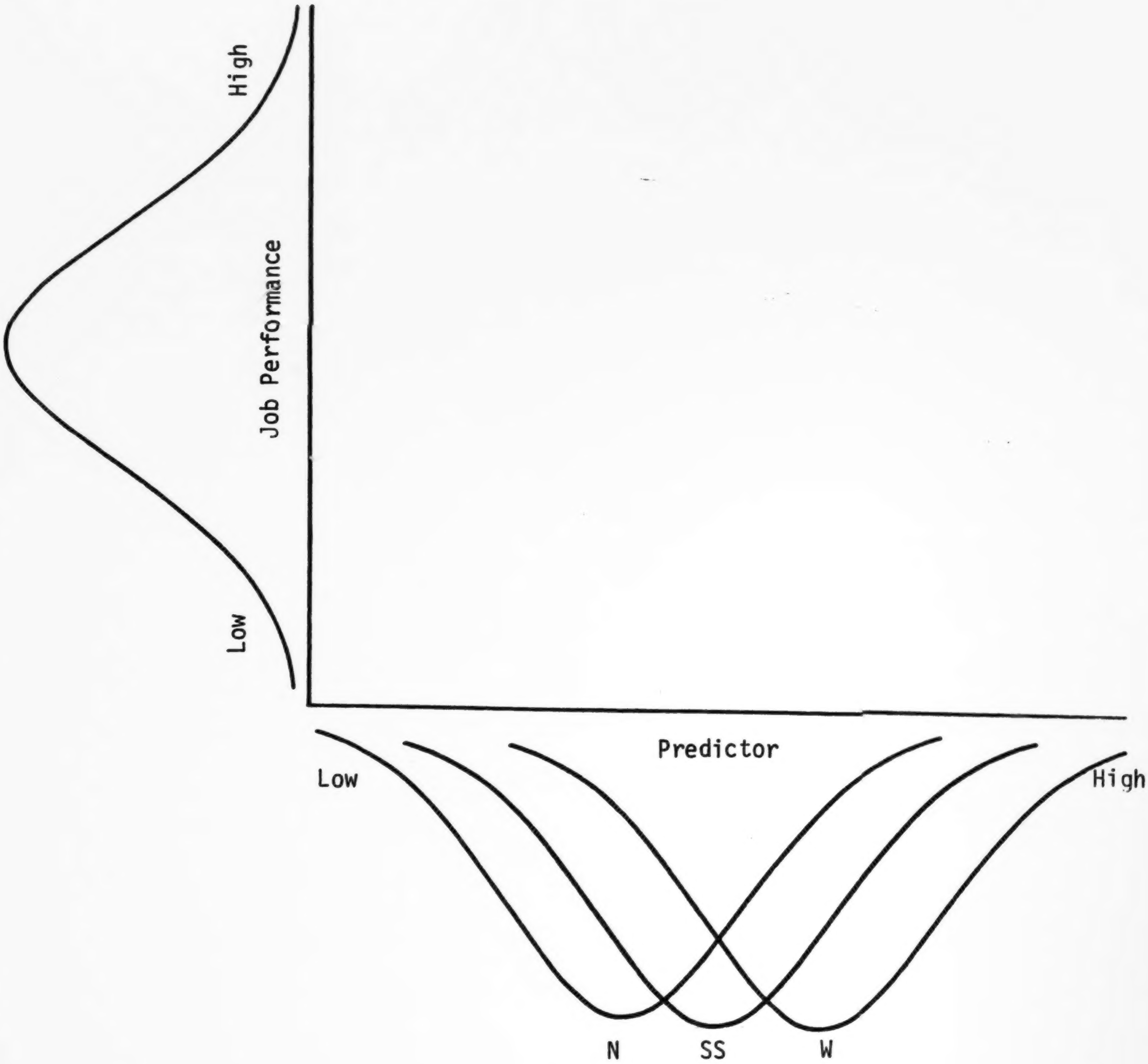


Figure 2. Comparable Job Performance and Differential Predictor Performance for Three Ethnic Groups

3. The correlation between test scores and job performance tended to be highest for Negroes, next for Spanish-surname personnel, and lowest for Whites. Although the coefficients of correlation between test score and job performance were not all statistically significant across all the tests investigated, more significant correlations were found for Negroes and Spanish-surname personnel than for Whites. This was especially true of the longitudinal phase of the project wherein the data were uncontaminated by cross sectional factors such as differences in length of employment, in differential change in the individual since time of application, etc. By expressing the coefficient of correlation in terms of plotted points away from a regression line on a two-way frequency distribution, the three magnitudes of coefficient can be shown on the following page (Figure 3).

In terms of the prediction of job performance from these three schemes, it is apparent that prediction will be most accurate within the Negro group, then within the Spanish-surname group, and least accurate within the White group. In fact, as the coefficient of correlation approaches zero, the only prediction which can be made approaches the mean of the criterion distribution. Conversely, as the coefficient of correlation approaches one, prediction throughout the range of the criterion becomes possible with increasing accuracy. Thus, when a Negro scores high within his own test distribution, a high predicted performance results. In the case of a White, however, the coefficient of correlation is insufficient to permit accurate prediction from either high or low test scores.

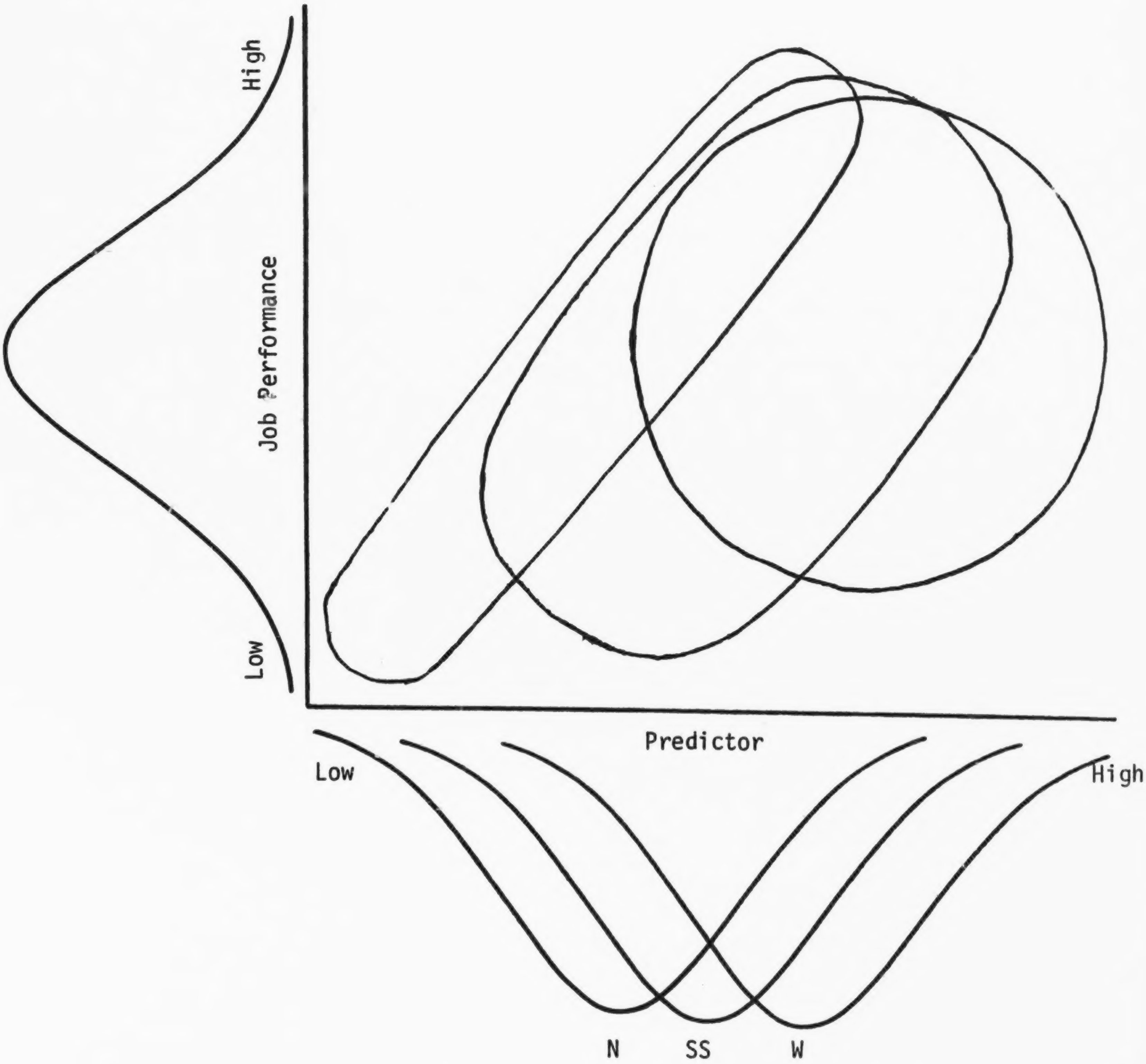

High
Job Performance
Low
Predictor
Low
High
N
SS
W

Figure 3. Comparable Job Performance, Differential Predictor Performance and Unequal Validity Coefficients for Three Ethnic Groups

Application of the Model

Thus, it can be seen that the test results could provide additional information about the probability of success of job applicants for some ethnic groups but not for others in the present circumstances. It will be recalled that there were no differences among the distributions of the interview ratings assigned to the three ethnic groups, but that the correlations between interview ratings and job performance were relatively low. This suggests that the probability of success on the job for Negroes and Spanish-surname personnel is not assessed as accurately with interviews as with tests, despite the fact that scores on the tests for the two minority groups were not as high as they were for Whites. Procedures are therefore needed which will more accurately identify the probability of job success for applicants than are currently available from the interview ratings alone. This means that when applicants are listed on the basis of interview ratings, not all available information is being used to refine the listing. It is suggested that more accurate selection could be obtained by modifying the position listing of Negroes and Spanish-surname personnel according to their test scores--since these scores correlate significantly with job performance, andbby leaving the positions of the Whites alone, since their scores do not correlate significantly with job performance. In other words, the position on the list should reflect the relative probability of success on the job of the various applicants. By using the additional information obtained from the testing procedures, increased precision in the assignment of probabilities for success should be possible. This would mean rearranging the list so as to place high scoring Negroes and Spanish-surname personnel above some White applicants. The object of listing is to rank applicants in order of their predicted success on the job. If high scoring Negroes and Spanish-surname personnel have higher probabilities of job success than some Whites, then these individuals should be selected first.

To obtain an indication as to how this procedure might have affected the 66 persons employed in the longitudinal phase of the present project, each minority group applicant's position in his ethnic group's distribution of X-0 $-¢ total score was noted and a modified distribution for Negroes and for Spanish-surname personnel was constructed by adding weights to the interview ratings as follows:

Score	Negro Weight	Spanish-surname Weight
80+	9	6
70-79	6	4
60-69	3	2

The smaller weights were assigned to the Spanish-surname group because of the lower correlation between their score and their job performance. Whereas the zero order coefficient of correlation between the interview ratings and job performance for the total group without the adjustment was .24, this value was found to be .44 after the adjustment.

The change in position rankings of minority group members after the weighting was as follows: eleven of 16 Negroes employed were assigned weights; one was assigned nine points and his performance category was 5; three were assigned six points and hheir performance categories were 4, 4 and 3; six were assigned three points and the performance categories were 5, 4, 4, 3, 3, 2 and 1. Thus it can be seen that nine of the eleven individuals assigned weights were average or above average performers. Of 18 Spanish-surname personnel, ten were assigned weights. Of these, one received six points (rating 3), four received four points (ratings of 5, 4, 3 and 3), and five received two points (ratings of 4, 3, 3, 3 and 1). In this instance only one individual was a below average performer.

In general, the interview ratings are assigned individuals in increments of five units. This means that many individuals on the final list may "occupy" the same position on the list. Assignment of weights other than multiples of five tends to "break up" this pattern and disperse individuals throughout the range. Thus, assignment of values based on the test scores has a greater effect on the ranking distribution than might be readily apparent.

It has been demonstrated that a procedure of adjusting the interview ratings according to favorable test performance could increase the accuracy with which job performance is predicted. It should be noted, however, that the foregoing demonstration may yield spuriously high accuracy since the adjustments were applied to the distribution on which the original coefficient had been computed. Undoubtedly, some shrinkage might have occurred if the procedure had been applied in a cross-validation sample. Although such a sample was unavailable for the present project would permit an accurate evaluation of the suggested procedure. In addition, another test score than the $-¢ X-0 test or combinations of test scores could have been used to obtain the weights. The procedure might have been further refined by using more accurate weights, such as those obtained from a least squares regression scheme for predicting performance.

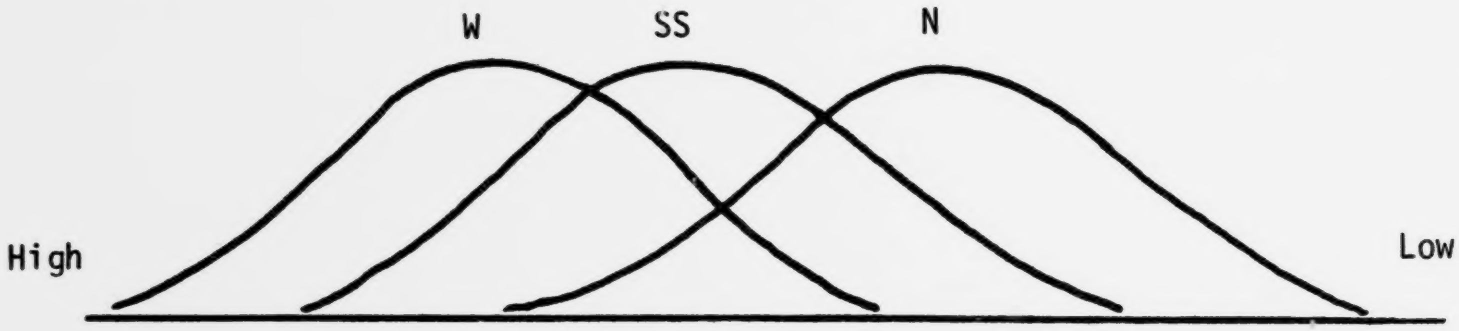
Hypothesized Explanation of Findings

Whereas the foregoing model describes the interrelationships among job performance, selection test scores, and probability of success on the job, it does not provide an explanation for the reported conditions. Such an explanation can only be hypothesized from a logical analysis of the labor market and employment possibilities existing in Denver at the time the present project was conducted. Such an explanation is hypothesized in the following section.

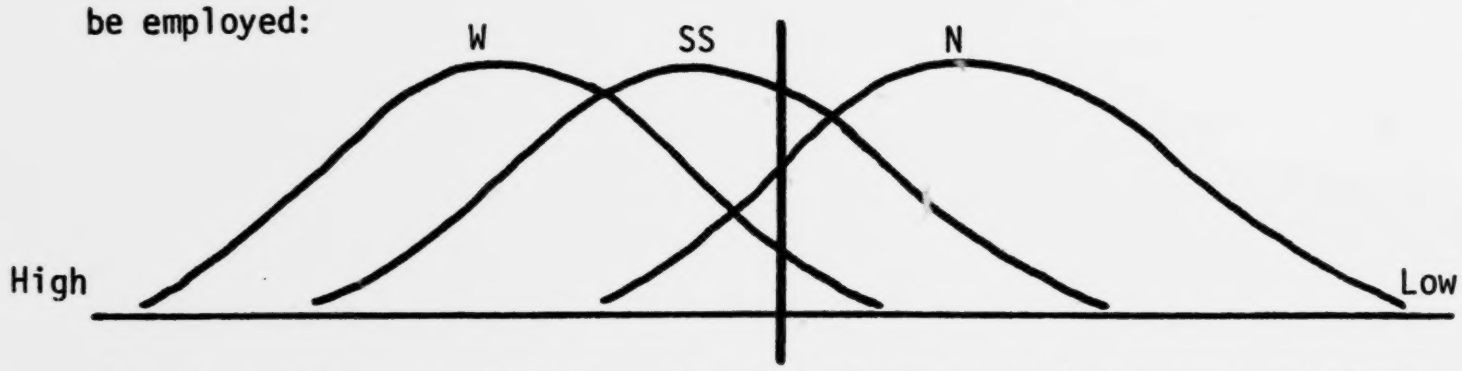
It will be recalled that the job "hospital attendant" can be considered, at best, an entry position so far as the total job market is concerned. Both in terms of salary and job duties, it must be placed relatively low on the overall job hierarchy. This means that applicants would ordinarily apply for higher level jobs if such jobs were available to them, rather than the lower-level hospital attendant assignments. It is here postulated that higher level jobs may have been available to the general White population at the time this project was conducted, but that higher level jobs were less available to minority group personnel. The minority group applicant population therefore contained many individuals who might have applied for higher level jobs had they had the opportunity to do so. On the other hand, it is postulated that the Whites did have such opportunities, thus leaving only less well qualified (even though higher scoring) individuals in the hospital attendant applicant group. This, in turn, meant that it was possible to identify many "better qualified" Negroes and Spanish-surname personnel than Whites, and the presence of these individuals in the minority work group accounted for the higher correlations between test score and job performance found in the minority subgroups.

This condition can be further illustrated as follows:

Let it be assumed that the total populations of White job applicants, Spanish-surname job applicants, and Negro job applicants can each be represented by a normal curve above a baseline of "qualification for employment in Denver." Schematically, the situation would be as follows:



If, by the application of selection procedures which identify the more well qualified individuals above some hypothetical cutting point, then only the highly qualified Negroes, the above average Spanish-surname personnel, but some of the average and the below average Whites will be employed:



This is another way of waying that by "skimming off" the best qualified of the minority group personnel the employer will more nearly assure high performance on the job than if he selects a preponderance of the White applicants. The problem is, of course, one of identifying these individuals at the time of application. It is here that the testing procedure could actually be of benefit to, rather than a hinderance to, minority group personnel. Before this condition can prevail, ethnic group membership must be identifiable at the time of application, and insight into the performance on tests of minority groups must be available.

To obtain some indication of the types of job applicants in the minority group applicant pool for the hospital attendant job, a comparison was made between the mean score of the Denver Negro group and the mean scores of some other work groups who had taken the Matrices Test. These data were available from administrations of the Matrices Test in other situations involving minority group personnel (one JOBS program and one training program). The scores available for the other groups and for the Denver applicants were as follows:

Origin of Data	Number of Cases	Job Classification	Mean Score
San Francisco	10	Aircraft Cleaner	19.9
New York	10	Aircraft Cleaner	23.9
Newark		Aircraft Cleaner	21.6
Chicago	14	Aircraft Cleaner	19.6
Los Angeles	7	Kitchen Helper	21.3
New York	10	Kitchen Helper	22.2
Denver	3	Kitchen Helper	29.3
Denver	2	Dining Service Helper	24.5
San Francisco	12	Kitchen Helper	18.8
Chicago	6	Janitor	15.0
San Francisco	5	Janitor	23.2
Jamaica	128	Mechanic	25.3
Total Denver Negro Applicants	74	Hospital Attendant Applicants	22.7
Employed Denver Negroes	17	Hospital Attendants	24.0

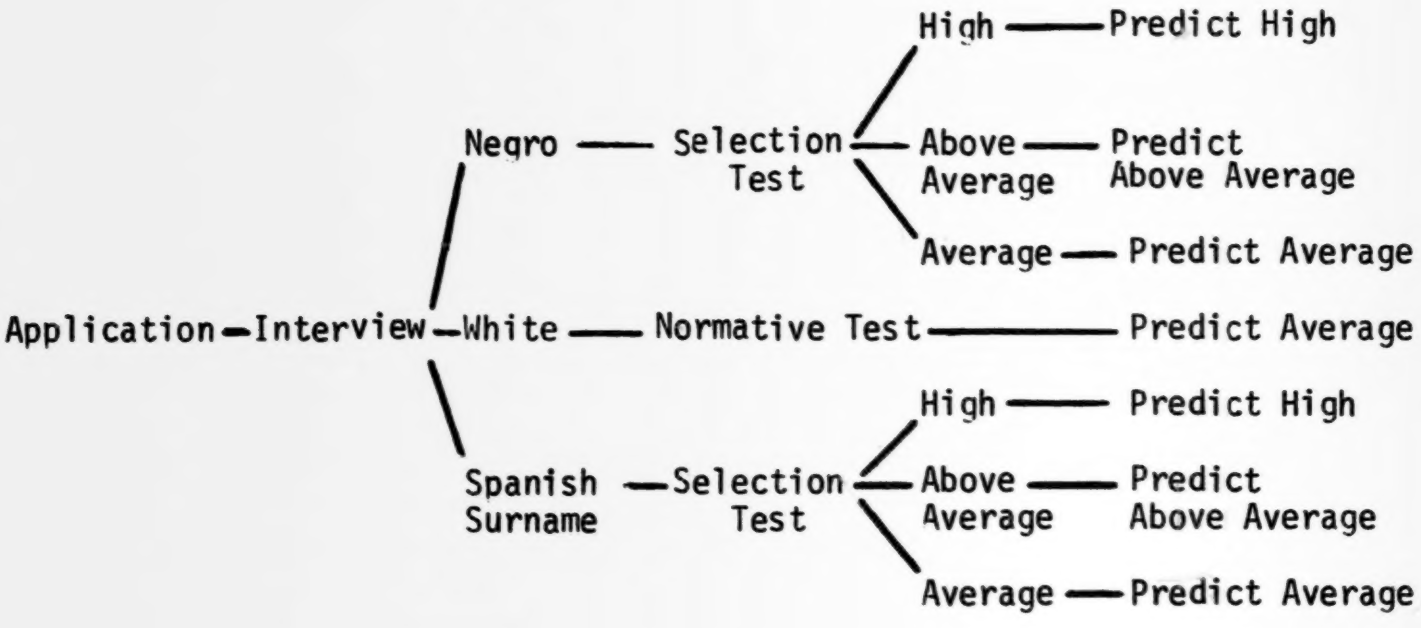
The Jamaicans were enrolled in a technical training program leading to positions as engine mechanics, were relatively young (early twenties) and had relatively good educational backgrounds (some were college graduates). The JOBS trainees were enrolled in training programs leading to entry-level positions in aircraft maintenance, janitorial and food service work.

From the foregoing it is apparent that the Negro hospital attendant applicants were a relatively high scoring group in relation to others who have taken the Matrices test. No other comparable test data were available.

Additional evidence about the Denver applicant group is available from the background characteristics presented earlier. Here it will be recalled that the Negro group was characterized by upward mobility, jobwise, and by considerable stability in their former positions.

As a practical selection procedure, it is suggested that all applicants be interviewed first, rated on the basis of the interview, and then tested. Ethnic group membership could either be obtained voluntarily at the time of application or as the result of the interview (just as such membership in a minority group is now obtained by asking supervisors to report the member of minority group personnel under the supervision when surveys are made). On the basis of test scores interpreted according to minority group norms, the interview ratings could then be adjusted as they were in the foregoing demonstration. This procedure therefore becomes a concerted effort on the part of the prospective employer to assign the applicant with high probability of success to a realistic rank among the total applicant group. The fact that ethnic group membership is, in effect, a moderator variable in the prediction scheme is incidental to the accurate assignment of the probability of success on the job.

The suggested procedure can be diagrammed schematically as follows:


Application
Interview
Negro
Selection Test
High
Predict High
Above Average
Predict Above Average
Average
Predict Average
White
Normative Test
Predict Average
Spanish Surname
Selection Test
High
Predict High
Above Average
Predict Above Average
Average
Predict Average

This suggested procedure will result in minority group applicants being hired "ahead of" White applicants. Are these individuals not being discriminated against? The answer rests with the definition adopted for the term "discrimination." To the extent that the accuracy of assignment of probability of success on a future job is increased, then discrimination is being reduced. The procedure here suggested simply modifies the assigned probabilities to be more nearly in line with the research evidence. As different research evidence is obtained, then the procedure must be changed.

The explanation of the findings presented here ties the results of the project closely to the labor market within minority groups in the Denver area. It was postulated that, because of some circumstance or other, the Denver labor supply is more favorable within minority groups of applicants than within the White group of applicants. As more higher level jobs become available to the Negroes and Spanish-surname personnel of the area, the composition of the hospital attendant applicant group will undoubtedly change. When this occurs, the selection procedure used to assign probabilities of success to each applicant in the total group must be changed. It is entirely conceivable that the coefficient of correlation between test scores and job performance will become lower as this occurs. If it does, then the testing could be dropped altogether. On the other hand, if the job is upgraded, or if some job crisis should occur (such as a major depression), and other jobs are disproportionately downgraded, then the White applicant population may change and this will require a change of selection procedure also. These possibilities simply underscore the critical need for additional research of this type.
As greater comprehension is gained into all facets of employee selection

and placement, satisfaction of the employee and satisfaction of the employer are more nearly assured. Without the systematic collection of evidence, however, such comprehension is unlikely to result.

Consideration of Selection Stage Procedure

In an earlier section of this report it was pointed out that time delays in the overall selection process tended to affect minority personnel more than Whites. This suggests that minority applicants with high probability of success on the job may be inadvertently dropped from further consideration wherever time delays could be eliminated. Whereas the Career Service Authority is aware of this factor and has already taken steps to overcome this condition, it bears repeating here that the elapsed time from application to hire must be kept as short as possible to retain all applicants as long as possible. It is recommended that application, interviewing and listing be carried out on the same day and that hospital interviewing be "speeded up" by modifying the "rule of three" procedure. In other words instead of calling three applicants for hospital interview when each opening occurs (and selecting one while asking the other two to return with a third applicant when another opening occurs), interviews at the hospital could be held only when several openings are available and then a relatively high proportion of all those interviewed could be hired immediately. For example, if six openings were available and nine applicants were interviewed, this might result in lesser attrition of prospective employees having high probability of job success than if the applicants came for interview three at a time for single openings with time delays between stages.

Summary Statement

Selection officials in the public service have a grave responsibility to the public and to the prospective employee to select individuals according to the probability of job success of applicants. This probability for any individual or subgroup of individuals will vary tremendously with the complexity of the job concerned and the quality of applicants comprising the labor market. It is essential, therefore, that selection procedures be sufficiently flexible to change as the labor market changes. In the present labor market in the Denver area, differences exist among ethnic groups in terms of their probability of success on the job of hospital attendant. As a temporary means of reflecting these differences, it has been suggested that test scores of Negroes and Spanish-surname personnel be used to modify the rankings they would otherwise receive on the basis of interview only. If the labor supply changes and the test results no longer mean the same as they do now, then the selection procedure can be changed accordingly. It should not be inferred from this discussion that standards are to be reduced or that the selection responsibility is to be taken less seriously than previously. Rather, the inference is that the only fair selection procedures are those which assign equal probabilities of being hired to those who have equal probabilities of success on a job. This principle should guide all selection decisions. The recommended procedure is an attempt to create this situation.

COLORADO CIVIL SERVICE COMMISSION

Data pertaining to four groups of jobs were obtained from the Colorado Civil Service Commission for the present project. These job groups were as follows:

Group One: Intermediate Clerk Typist

Group Two: Clerk Typist
Senior Clerk Typist
Dictating Machine Operator

Group Three: Clerk Stenographer
Intermediate Clerk Stenographer
Senior Clerk Stenographer

Group Four: Resident Supervisor Trainee

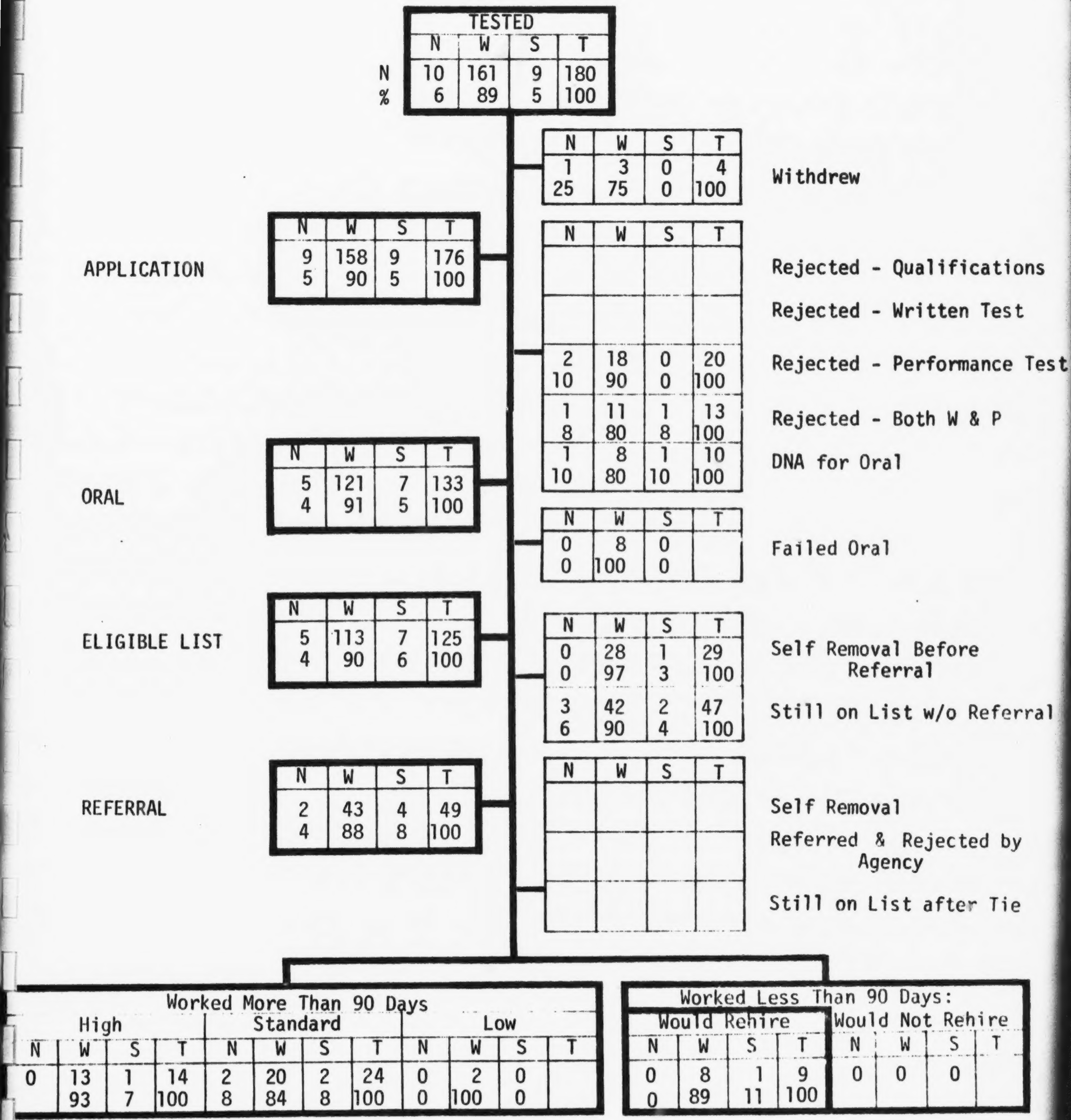
Applicants for jobs in Groups One and Four completed the three low verbal tests, Matrices, X-O $-¢ Test and Visual Memory at the time of application in addition to all other tests required in the selection process. Applicants for jobs in Groups Two and Three indicated their ethnic group membership at the time of application but did not take the low verbal tests. In no instance were the low verbal tests involved in the selection decisions.

Three types of results were obtained from analysis of data from the Colorado Civil Service Commission. These were as follows:

1. Selection Stage, Ethnic Group and Demographic Data,
2. Performance Data by Ethnic Group for Those Employed, and
3. Coefficients of Correlation Between Prediction Variables and Ratings in Four Areas of Performance for the Total Group of Employed Individuals.

Selection Stage by Ethnic Group - Group One

In Graph 27 is shown the pattern of attrition-survival through the selection procedure used by the Colorado Civil Service Commission for



TESTED

	N	W	S	T
N	10	161	9	180
%	6	89	5	100

	N	W	S	T
Withdrew	1 25	3 75	0 0	4 100

APPLICATION

N	W	S	T
9 5	158 90	9 5	176 100

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	2 10	18 90	0 0	20 100
Rejected - Both W & P	1 8	11 80	1 8	13 100
DNA for Oral	1 10	8 80	1 10	10 100

ORAL

N	W	S	T
5 4	121 91	7 5	133 100

	N	W	S	T
Failed Oral	0 0	8 100	0 0	

ELIGIBLE LIST

N	W	S	T
5 4	113 90	7 6	125 100

	N	W	S	T
Self Removal Before Referral	0 0	28 97	1 3	29 100
Still on List w/o Referral	3 6	42 90	2 4	47 100

REFERRAL

N	W	S	T
2 4	43 88	4 8	49 100

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	13 93	1 7	14 100	2 8	20 84	2 8	24 100	0 0	2 100	0 0	

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	8 89	1 11	9 100	0	0	0	

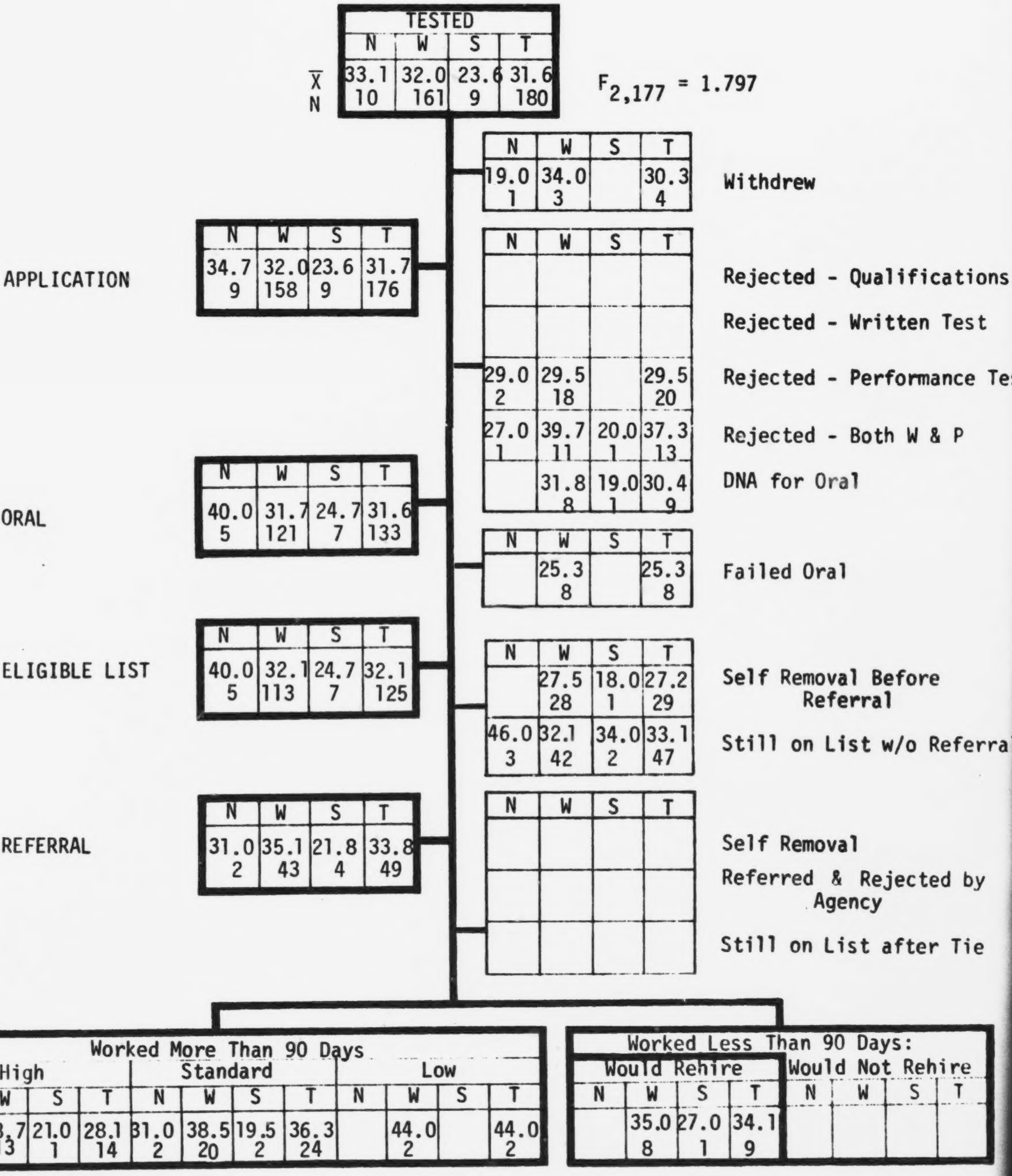
Graph 27. Attrition-Survival by Selection Stage and Ethnic Group - Group One

Intermediate Clerk Typists. The "selection system" represented in this and all subsequent graphs is similar to that designed for the Career Service Authority (Graphs 1-26) but reflects the specific stages and conditions of elimination from consideration unique to the State Civil Service employment procedures. Inspection of Graph 27 reveals remarkable consistency of percentages of the three ethnic groups moving through the various selection stages. Even with the very small number of cases involved in some cells of the graph, the percentages seldom vary from expectancy by more than five per cent.

In Graph 28 the ages of the applicants are shown. Although the differences among the group are not statistically significant (F=1.797), the Spanish-surname applicants tended to be younger, on the average, than the other two groups of applicants. Whereas the White applicants rejected because of failing both performance and written tests tended to be older than the mean age of the tested group, the Negro and Spanish-surname rejects tended to be younger.

In Graph 29 the educational levels of the groups in terms of years of formal schooling completed are shown. Within the total applicant group, the Negroes had a slightly higher level than the other two groups.

In Graphs 30 through 34 are shown the low verbal test scores by selection stage and ethnic group. As was true for the hospital attendant applicants and for most of the presently employed individuals in the cross sectional phase of the projects, Whites tended to score highest, followed, in turn, by the Spanish-surname group and the Negroes. Although some correlation between selection stage and employment is apparent from this and other graphs in this section, these relationships can be better understood from analyses contained in subsequent sections



		N	W	S	T
TESTED	$\overline{X}$	33.1	32.0	23.6	31.6
	N	10	161	9	180

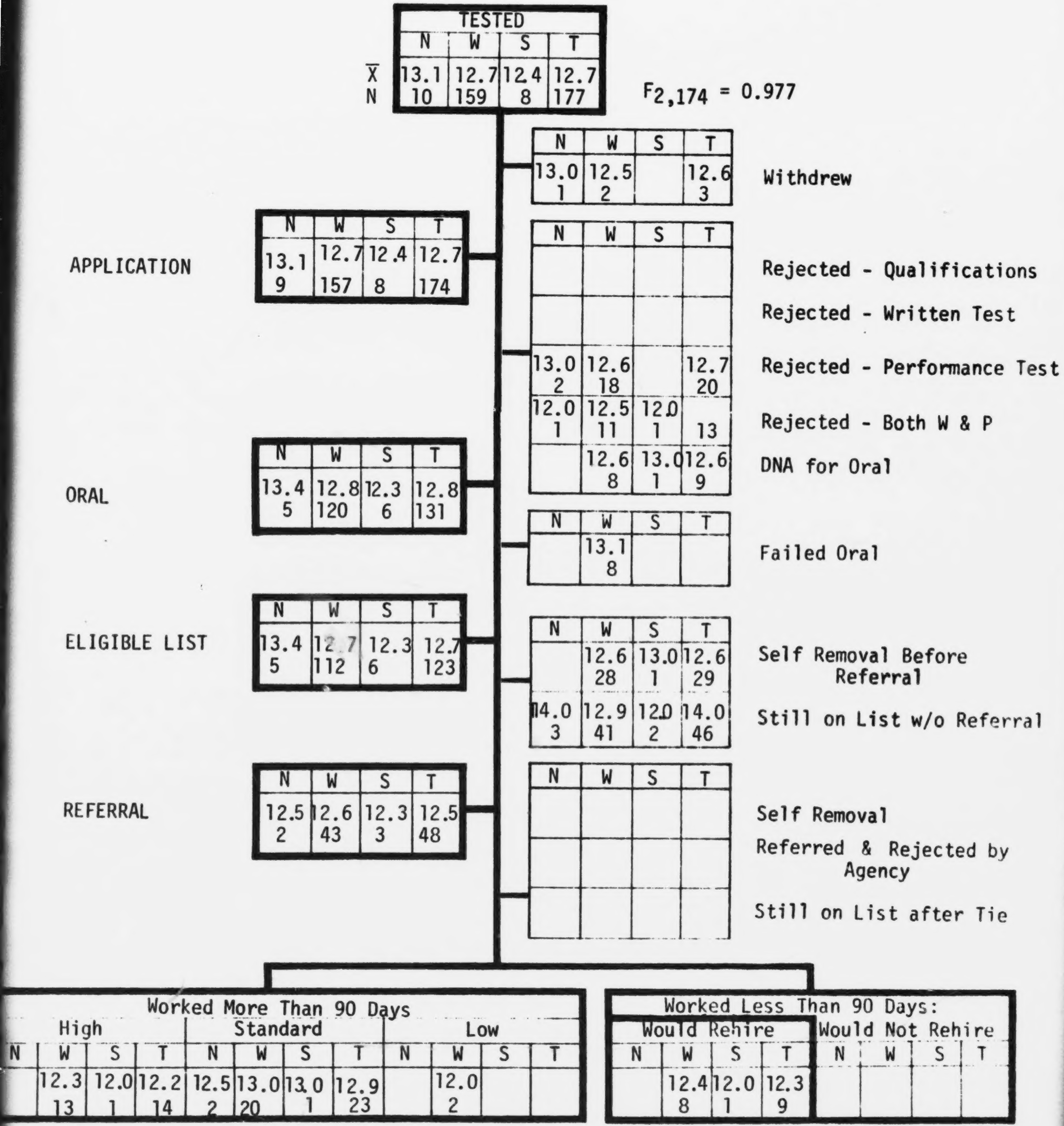
$F_{2,177} = 1.797$

	N	W	S	T
Withdrew	19.0 1	34.0 3		30.3 4
APPLICATION	34.7 9	32.0 158	23.6 9	31.7 176
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Tes	29.0 2	29.5 18		29.5 20
Rejected - Both W & P	27.0 1	39.7 11	20.0 1	37.3 13
DNA for Oral		31.8 8	19.0 1	30.4 9
ORAL	40.0 5	31.7 121	24.7 7	31.6 133
Failed Oral		25.3 8		25.3 8
ELIGIBLE LIST	40.0 5	32.1 113	24.7 7	32.1 125
Self Removal Before Referral		27.5 28	18.0 1	27.2 29
Still on List w/o Referral	46.0 3	32.1 42	34.0 2	33.1 47
REFERRAL	31.0 2	35.1 43	21.8 4	33.8 49
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	28.7 13	21.0 1	28.1 14	31.0 2	38.5 20	19.5 2	36.3 24		44.0 2		44.0 2

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	35.0 8	27.0 1	34.1 9				

Graph 28. Age by Selection Stage and Ethnic Group - Group One



TESTED

	N	W	S	T
$\overline{X}$	13.1	12.7	12.4	12.7
N	10	159	8	177

$F_{2,174} = 0.977$

Stage	N	W	S	T
APPLICATION	13.1 9	12.7 157	12.4 8	12.7 174
ORAL	13.4 5	12.8 120	12.3 6	12.8 131
ELIGIBLE LIST	13.4 5	12.7 112	12.3 6	12.7 123
REFERRAL	12.5 2	12.6 43	12.3 3	12.5 48

	N	W	S	T
Withdrew	13.0 1	12.5 2		12.6 3
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	13.0 2	12.6 18		12.7 20
Rejected - Both W & P	12.0 1	12.5 11	12.0 1	13
DNA for Oral		12.6 8	13.0 1	12.6 9
Failed Oral		13.1 8		
Self Removal Before Referral		12.6 28	13.0 1	12.6 29
Still on List w/o Referral	14.0 3	12.9 41	12.0 2	14.0 46
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

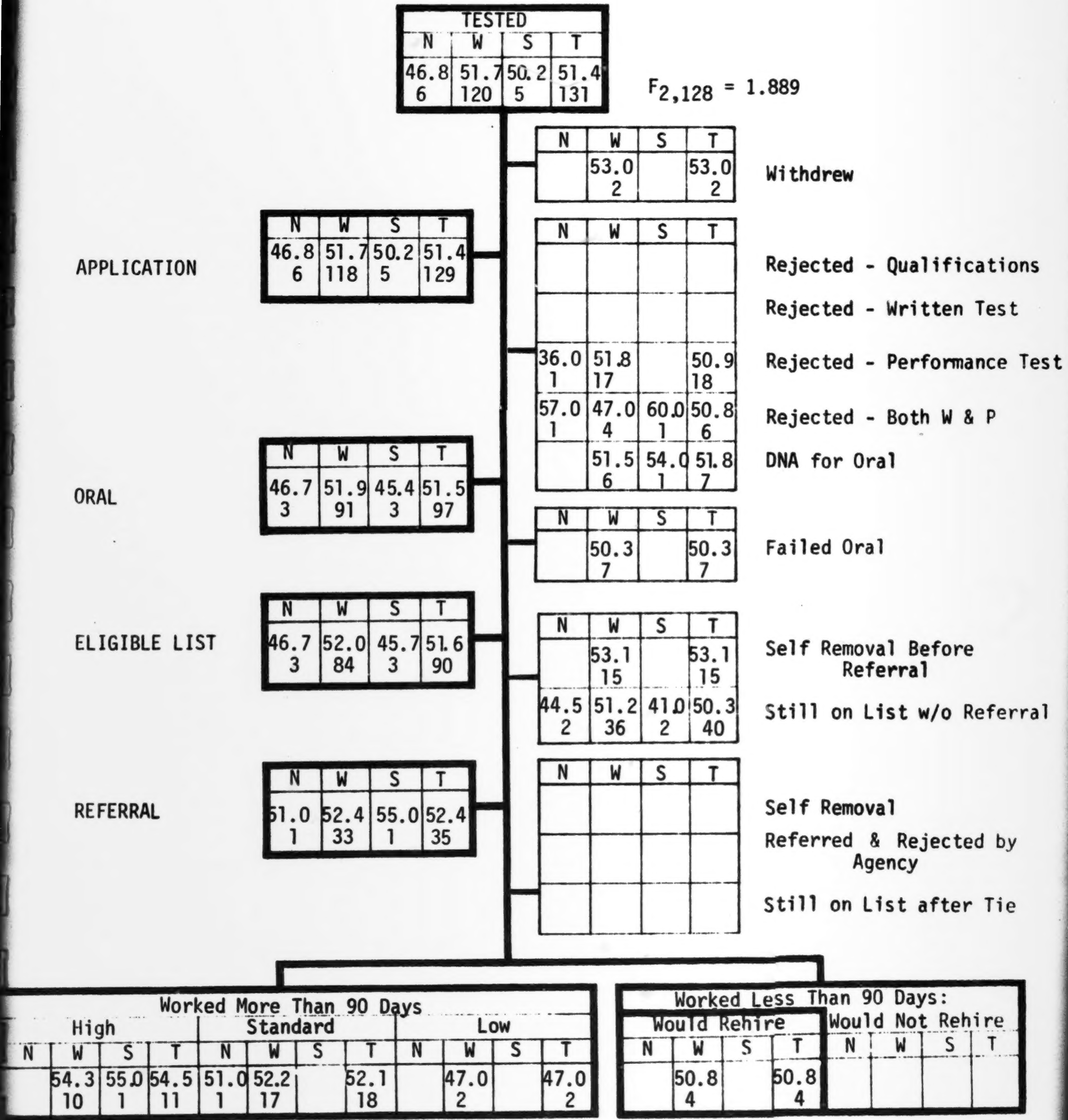
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	12.3 13	12.0 1	12.2 14	12.5 2	13.0 20	13.0 1	12.9 23		12.0 2		

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	12.4 8	12.0 1	12.3 9				

Graph 29. Education by Selection Stage and Ethnic Group - Group One



TESTED

N	W	S	T
46.8 6	51.7 120	50.2 5	51.4 131

$F_{2,128} = 1.889$

APPLICATION

N	W	S	T
46.8 6	51.7 118	50.2 5	51.4 129

ORAL

N	W	S	T
46.7 3	51.9 91	45.4 3	51.5 97

ELIGIBLE LIST

N	W	S	T
46.7 3	52.0 84	45.7 3	51.6 90

REFERRAL

N	W	S	T
51.0 1	52.4 33	55.0 1	52.4 35

	N	W	S	T
Withdrew		53.0 2		53.0 2

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	36.0 1	51.8 17		50.9 18
Rejected - Both W & P	57.0 1	47.0 4	60.0 1	50.8 6
DNA for Oral		51.5 6	54.0 1	51.8 7

	N	W	S	T
Failed Oral		50.3 7		50.3 7

	N	W	S	T
Self Removal Before Referral		53.1 15		53.1 15
Still on List w/o Referral	44.5 2	51.2 36	41.0 2	50.3 40

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

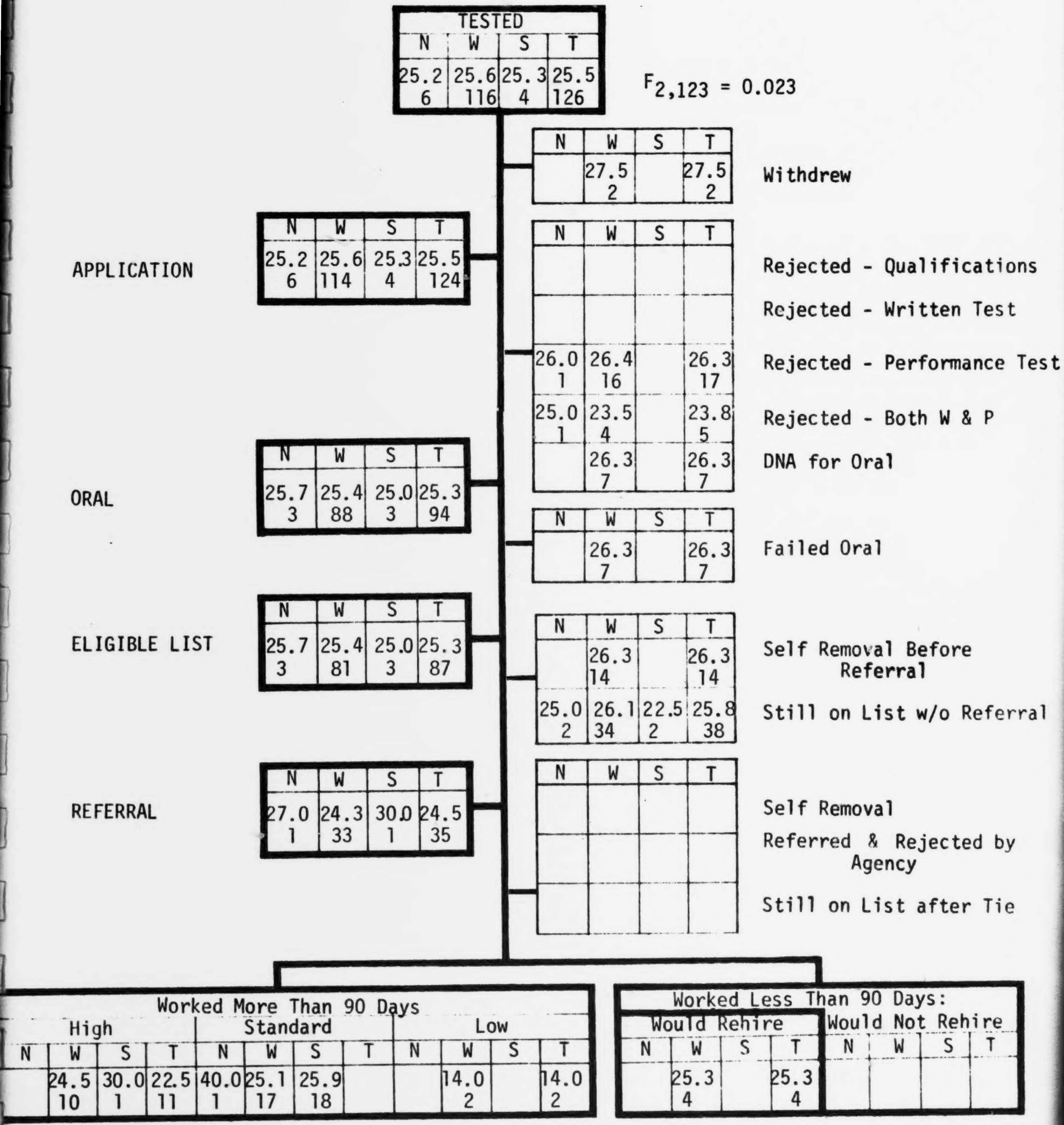
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	54.3 10	55.0 1	54.5 11	51.0 1	52.2 17		52.1 18		47.0 2		47.0 2

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	50.8 4		50.8 4				

Graph 30. X-O Score by Selection Stage and Ethnic Group - Group One



$F_{2,123} = 0.023$

TESTED

N	W	S	T
25.2 6	25.6 116	25.3 4	25.5 126

	N	W	S	T
Withdrew		27.5 2		27.5 2

APPLICATION

N	W	S	T
25.2 6	25.6 114	25.3 4	25.5 124

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	26.0 1	26.4 16		26.3 17
Rejected - Both W & P	25.0 1	23.5 4		23.8 5
DNA for Oral		26.3 7		26.3 7

ORAL

N	W	S	T
25.7 3	25.4 88	25.0 3	25.3 94

	N	W	S	T
Failed Oral		26.3 7		26.3 7

ELIGIBLE LIST

N	W	S	T
25.7 3	25.4 81	25.0 3	25.3 87

	N	W	S	T
Self Removal Before Referral		26.3 14		26.3 14
Still on List w/o Referral	25.0 2	26.1 34	22.5 2	25.8 38

REFERRAL

N	W	S	T
27.0 1	24.3 33	30.0 1	24.5 35

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

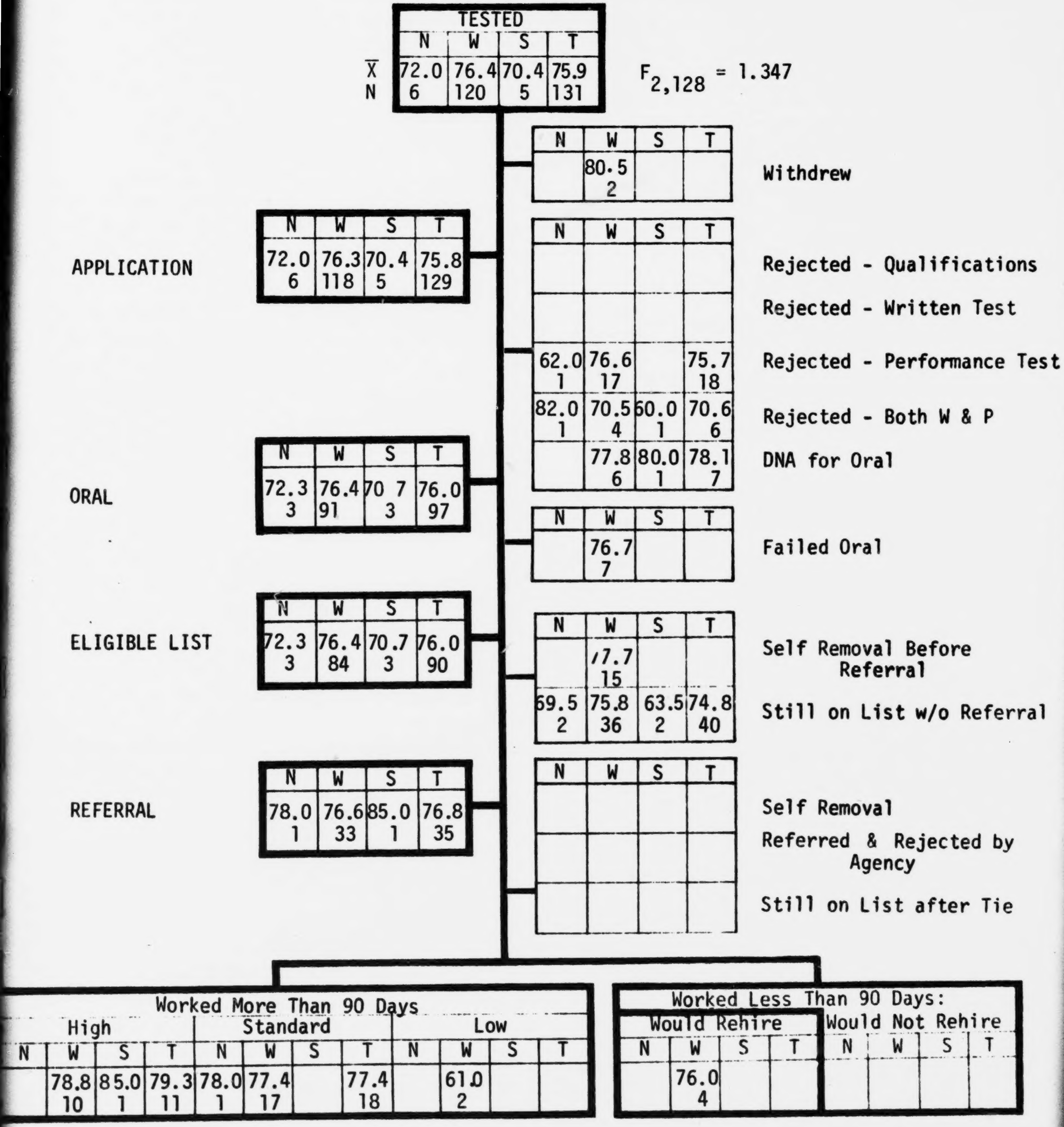
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	24.5 10	30.0 1	22.5 11	40.0 1	25.1 17	25.9 18			14.0 2		14.0 2

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	25.3 4		25.3 4				

Graph 31. $-¢ Score by Selection Stage and Ethnic Group - Group One



TESTED

	N	W	S	T
$\overline{X}$	72.0	76.4	70.4	75.9
N	6	120	5	131

$F_{2,128} = 1.347$

	N	W	S	T
Withdrew		80.5 2		

	N	W	S	T
APPLICATION	72.0 6	76.3 118	70.4 5	75.8 129

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	62.0 1	76.6 17		75.7 18
Rejected - Both W & P	82.0 1	70.5 4	60.0 1	70.6 6
DNA for Oral		77.8 6	80.0 1	78.1 7

	N	W	S	T
ORAL	72.3 3	76.4 91	70.7 3	76.0 97

	N	W	S	T
Failed Oral		76.7 7		

	N	W	S	T
ELIGIBLE LIST	72.3 3	76.4 84	70.7 3	76.0 90

	N	W	S	T
Self Removal Before Referral		77.7 15		
Still on List w/o Referral	69.5 2	75.8 36	63.5 2	74.8 40

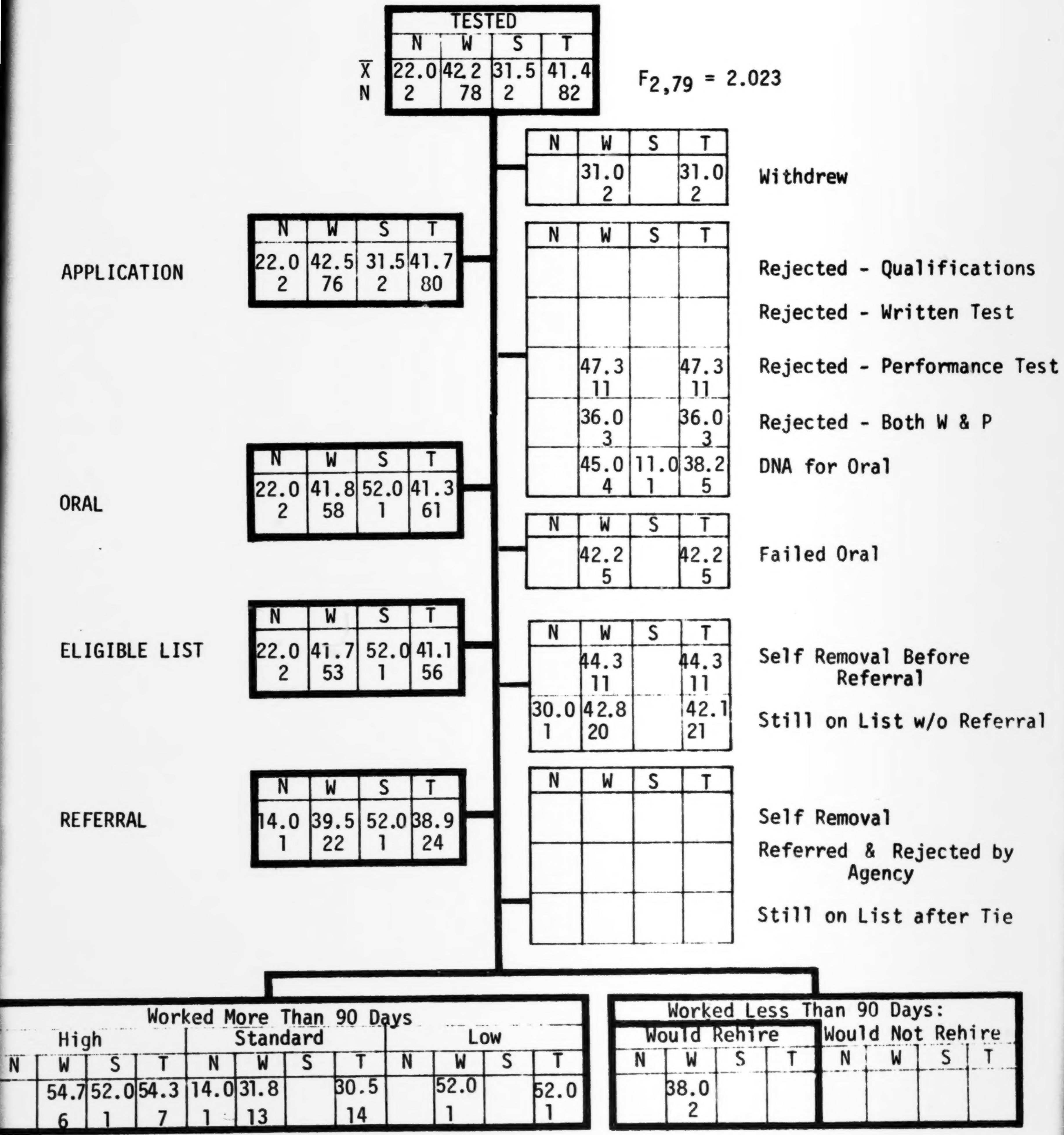
	N	W	S	T
REFERRAL	78.0 1	76.6 33	85.0 1	76.8 35

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	78.8 10	85.0 1	79.3 11	78.0 1	77.4 17		77.4 18		61.0 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	76.0 4						

Graph 32. X-O $-¢ Score by Selection Stage and Ethnic Group - Group One



	TESTED			
	N	W	S	T
$\overline{X}$	22.0	42.2	31.5	41.4
N	2	78	2	82

$F_{2,79} = 2.023$

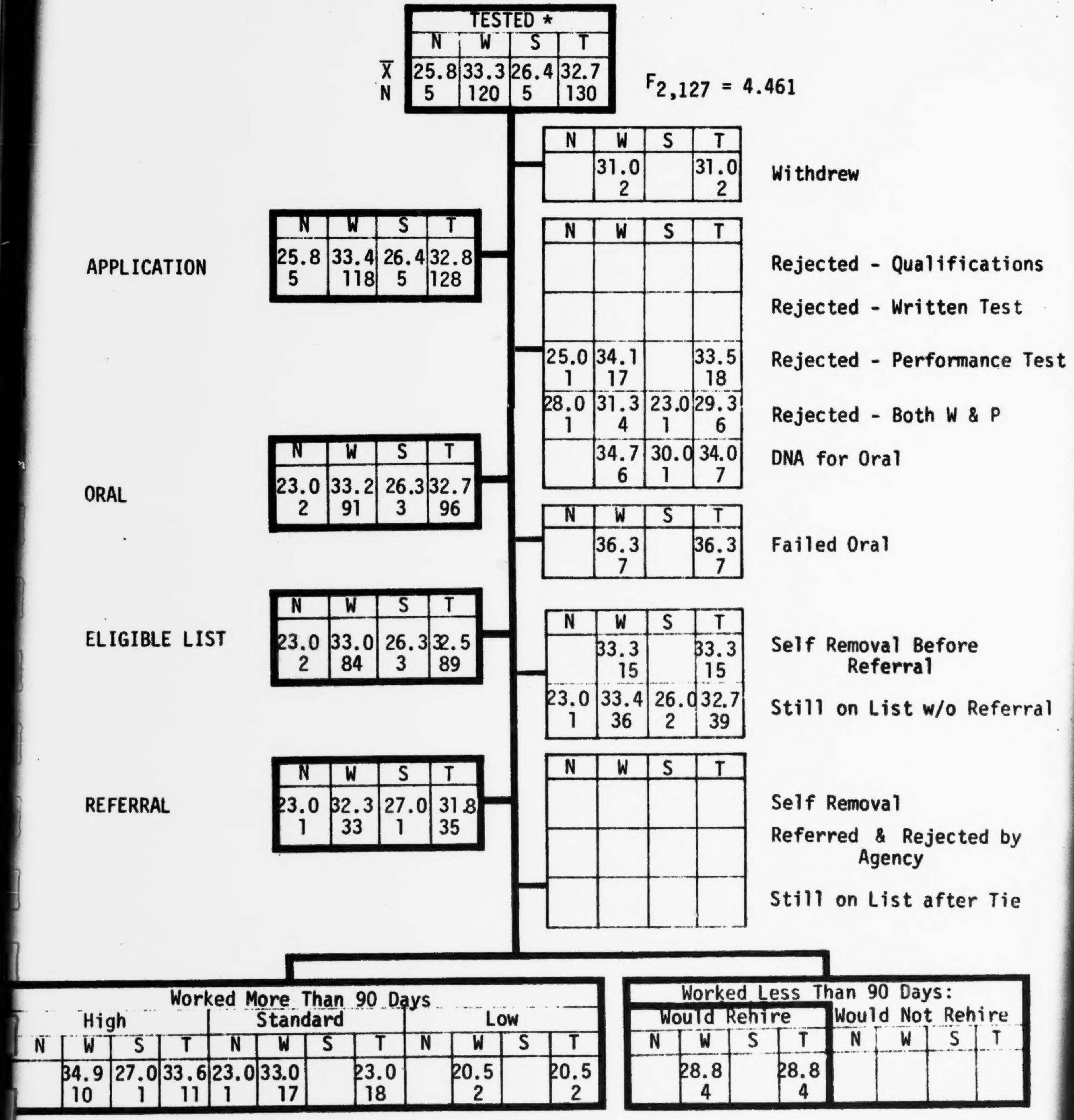
	N	W	S	T
APPLICATION	22.0 2	42.5 76	31.5 2	41.7 80
ORAL	22.0 2	41.8 58	52.0 1	41.3 61
ELIGIBLE LIST	22.0 2	41.7 53	52.0 1	41.1 56
REFERRAL	14.0 1	39.5 22	52.0 1	38.9 24

	N	W	S	T
Withdrew		31.0 2		31.0 2
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		47.3 11		47.3 11
Rejected - Both W & P		36.0 3		36.0 3
DNA for Oral		45.0 4	11.0 1	38.2 5
Failed Oral		42.2 5		42.2 5
Self Removal Before Referral		44.3 11		44.3 11
Still on List w/o Referral	30.0 1	42.8 20		42.1 21
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	54.7 6	52.0 1	54.3 7	14.0 1	31.8 13		30.5 14		52.0 1		52.0 1

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	38.0 2						

Graph 33. Visual Memory Score by Selection Stage and Ethnic Group -Group One



TESTED *

	N	W	S	T
$\overline{X}$	25.8	33.3	26.4	32.7
N	5	120	5	130

$F_{2,127} = 4.461$

	N	W	S	T
Withdrew		31.0 2		31.0 2
APPLICATION	25.8 5	33.4 118	26.4 5	32.8 128
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	25.0 1	34.1 17		33.5 18
Rejected - Both W & P	28.0 1	31.3 4	23.0 1	29.3 6
DNA for Oral		34.7 6	30.0 1	34.0 7
ORAL	23.0 2	33.2 91	26.3 3	32.7 96
Failed Oral		36.3 7		36.3 7
ELIGIBLE LIST	23.0 2	33.0 84	26.3 3	32.5 89
Self Removal Before Referral		33.3 15		33.3 15
Still on List w/o Referral	23.0 1	33.4 36	26.0 2	32.7 39
REFERRAL	23.0 1	32.3 33	27.0 1	31.8 35
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	34.9 10	27.0 1	33.6 11	23.0 1	33.0 17		23.0 18		20.5 2		20.5 2

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	28.8 4		28.8 4				

Graph 34. Matrices Score by Selection Stage and Ethnic Group - Group One

*Significant at .05 level or beyond

of the report.

In Graphs 35 through 46 are shown the results of analyses of the scores of tests and other selection procedures used by the Colorado Civil Service Commission for Intermediate Clerk Typists.

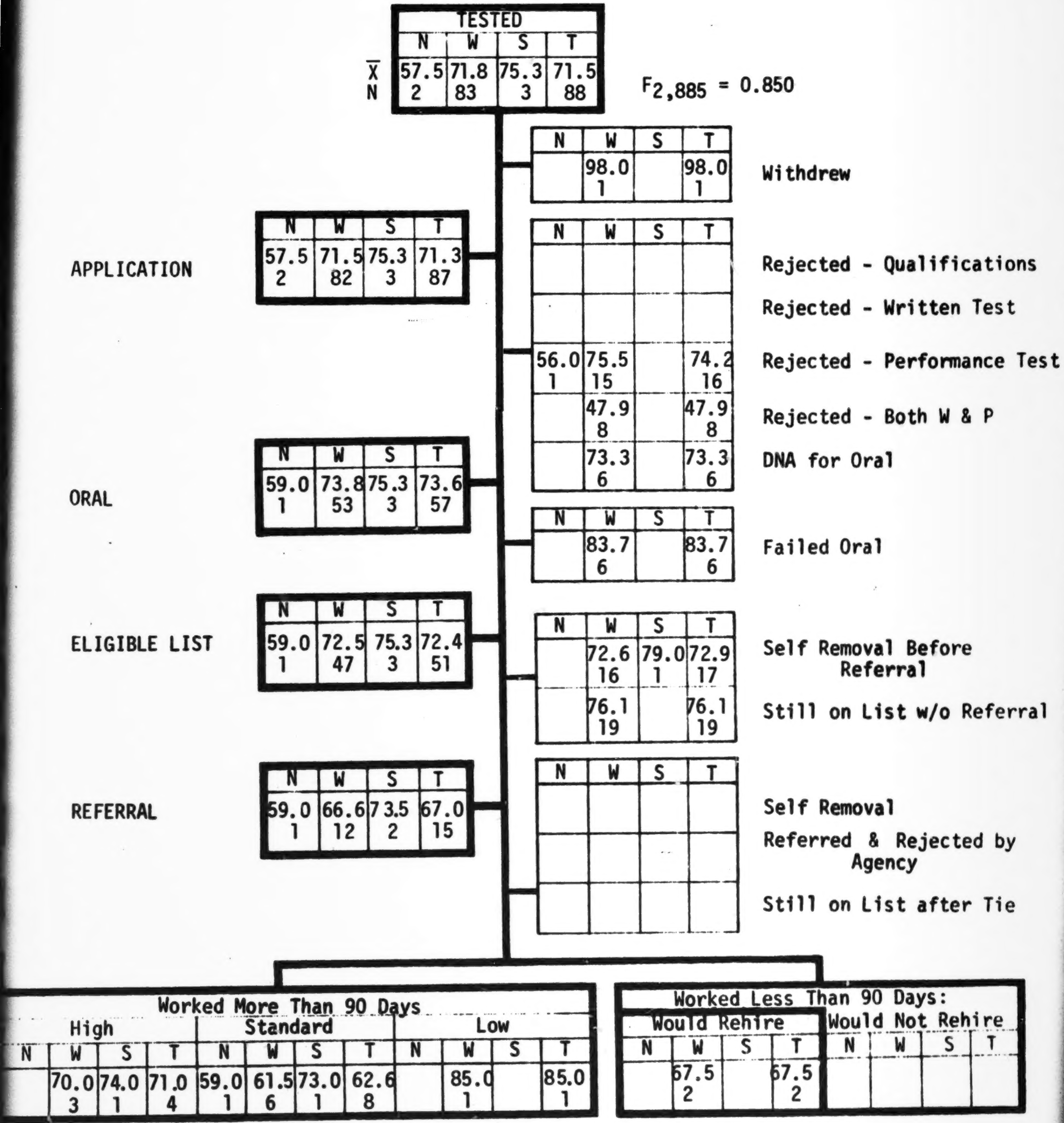
On the score for Book I-B and the written test, the Negroes scored highest. On the typing test and interview ratings, the Spanish-surname applicants scored highest. Otherwise, the White applicants tended to rank first.

As seen in Graph 47, a higher percentage of Spanish-surname applicants was married than the other two groups, this despite the younger age of this group.

The Negro and Spanish-surname groups had held their last position for a shorter period of time and had lived in Colorado a shorter period of time than the White group (Graphs 48 and 50). Whereas the salary at last employment was comparable for Negro and White applicants, the Spanish-surname applicants had been earning considerably less (Graph 49). This, of course, may be related to their younger age.

Selection Stage by Ethnic Group - Group Two

In Graphs 51 through 76 are shown the test and selection data by selection stage and ethnic group for applicants in Graph II. Only if applicants had applied for listing in Group Two as well as Group One would the Group Two personnel have been administered the low verbal tests (Graphs 54 through 58). For analyses in the present project, each applicant was classified in the highest category for which he was applying, unless he was hired into a lower job, and then he was re-classified accordingly.



TESTED	N	W	S	T
$\overline{X}$	57.5	71.8	75.3	71.5
N	2	83	3	88

$F_{2,885} = 0.850$

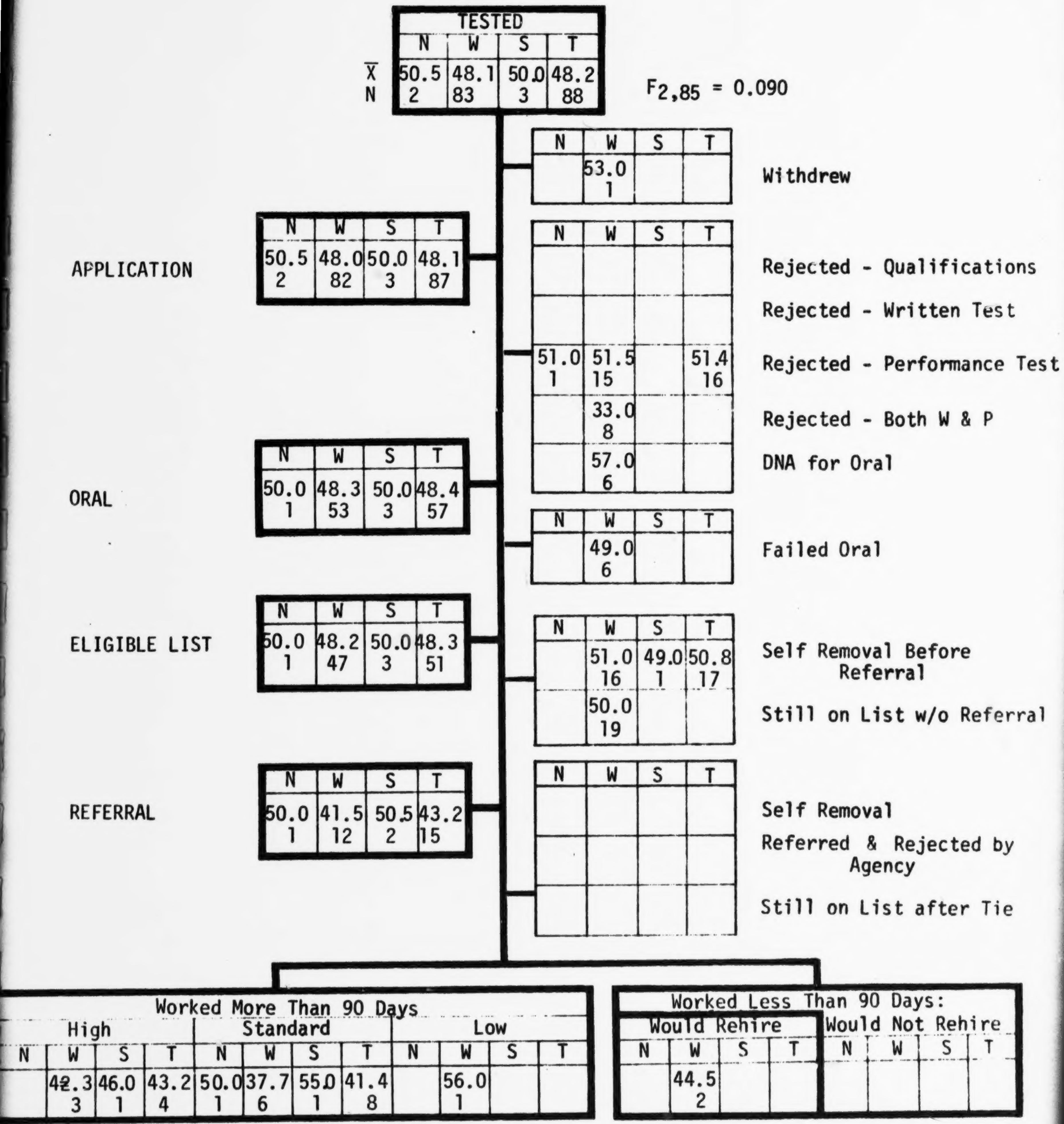
	N	W	S	T
APPLICATION	57.5 2	71.5 82	75.3 3	71.3 87
ORAL	59.0 1	73.8 53	75.3 3	73.6 57
ELIGIBLE LIST	59.0 1	72.5 47	75.3 3	72.4 51
REFERRAL	59.0 1	66.6 12	73.5 2	67.0 15

	N	W	S	T
Withdrew		98.0 1		98.0 1
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	56.0 1	75.5 15		74.2 16
Rejected - Both W & P		47.9 8		47.9 8
DNA for Oral		73.3 6		73.3 6
Failed Oral		83.7 6		83.7 6
Self Removal Before Referral		72.6 16	79.0 1	72.9 17
Still on List w/o Referral		76.1 19		76.1 19
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	70.0 3	74.0 1	71.0 4	59.0 1	61.5 6	73.0 1	62.6 8		85.0 1		85.0 1

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	67.5 2		67.5 2				

Graph 35. Book I-A Score by Selection Stage and Ethnic Group - Group One



$F_{2,85} = 0.090$

TESTED

	N	W	S	T
$\overline{X}$	50.5	48.1	50.0	48.2
N	2	83	3	88

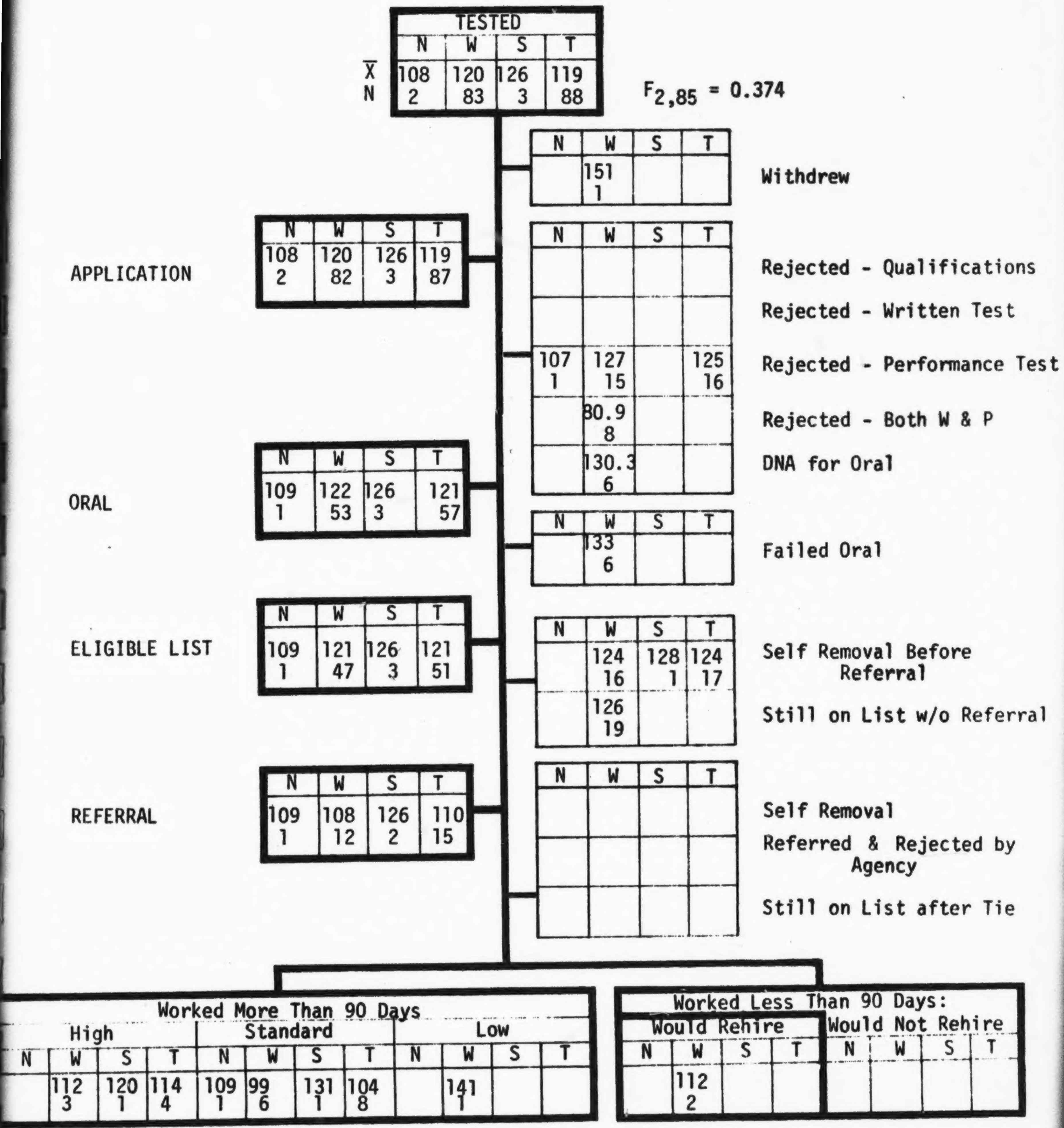
Stage	N	W	S	T
APPLICATION	50.5 2	48.0 82	50.0 3	48.1 87
ORAL	50.0 1	48.3 53	50.0 3	48.4 57
ELIGIBLE LIST	50.0 1	48.2 47	50.0 3	48.3 51
REFERRAL	50.0 1	41.5 12	50.5 2	43.2 15

Outcome	N	W	S	T
Withdrew		53.0 1		
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	51.0 1	51.5 15		51.4 16
Rejected - Both W & P		33.0 8		
DNA for Oral		57.0 6		
Failed Oral		49.0 6		
Self Removal Before Referral		51.0 16	49.0 1	50.8 17
Still on List w/o Referral		50.0 19		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	42.3 3	46.0 1	43.2 4	50.0 1	37.7 6	55.0 1	41.4 8		56.0 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	44.5 2						

Graph 36. Book I-B Score by Selection Stage and Ethnic Group - Group One



$F_{2,85} = 0.374$

	TESTED N	TESTED W	TESTED S	TESTED T
$\overline{X}$ N	108 2	120 83	126 3	119 88

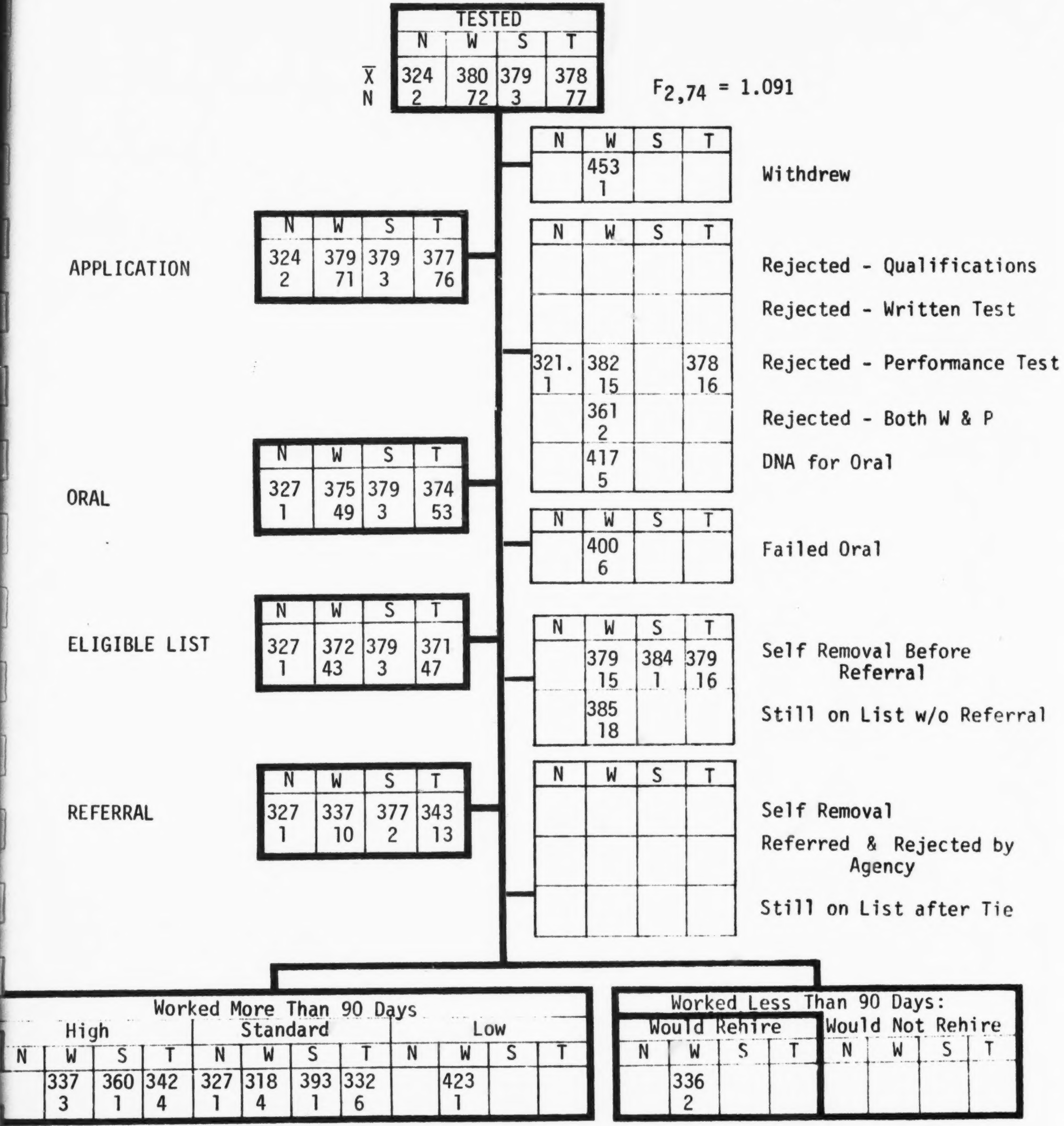
	N	W	S	T
APPLICATION	108 2	120 82	126 3	119 87
ORAL	109 1	122 53	126 3	121 57
ELIGIBLE LIST	109 1	121 47	126 3	121 51
REFERRAL	109 1	108 12	126 2	110 15

	N	W	S	T
Withdrew		151 1		
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	107 1	127 15		125 16
Rejected - Both W & P		80.9 8		
DNA for Oral		130.3 6		
Failed Oral		133 6		
Self Removal Before Referral		124 16	128 1	124 17
Still on List w/o Referral		126 19		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	112 3	120 1	114 4	109 1	99 6	131 1	104 8		141 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	112 2						

Graph 37. Books I-A and B Combined Score by Selection Stage and Ethnic Group - Group One



$F_{2,74} = 1.091$

TESTED	N	W	S	T
$\overline{X}$	324	380	379	378
N	2	72	3	77

	N	W	S	T
Withdrew		453 1		

APPLICATION	N	W	S	T
	324 2	379 71	379 3	377 76

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	321. 1	382 15		378 16
Rejected - Both W & P		361 2		
DNA for Oral		417 5		

ORAL	N	W	S	T
	327 1	375 49	379 3	374 53

	N	W	S	T
Failed Oral		400 6		

ELIGIBLE LIST	N	W	S	T
	327 1	372 43	379 3	371 47

	N	W	S	T
Self Removal Before Referral		379 15	384 1	379 16
Still on List w/o Referral		385 18		

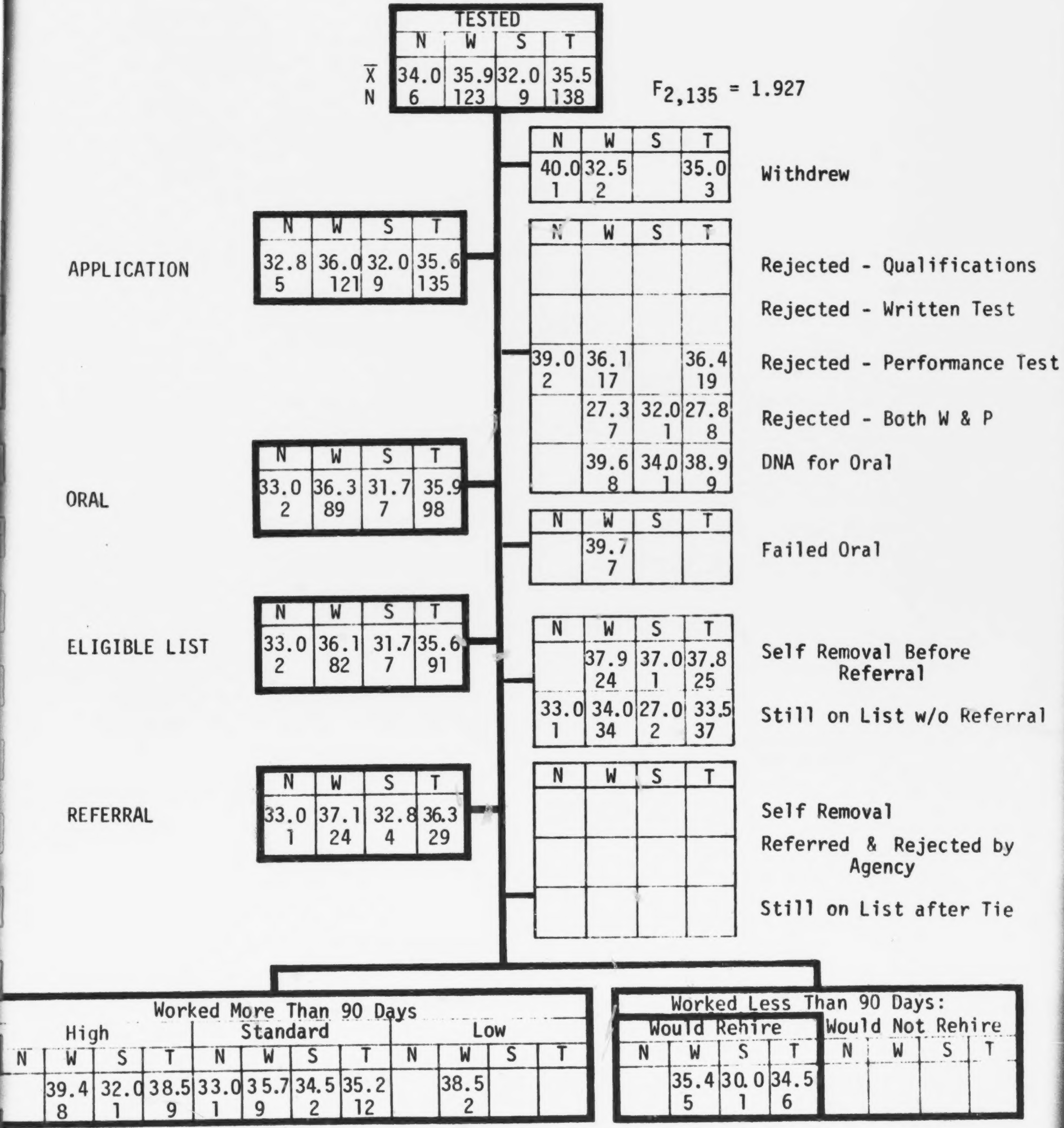
REFERRAL	N	W	S	T
	327 1	337 10	377 2	343 13

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	337 3	360 1	342 4	327 1	318 4	393 1	332 6		423 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	336 2						

Graph 38. Books I-A and B Weighted Score by Selection Stage and Ethnic Group - Group One



TESTED	N	W	S	T
$\overline{X}$	34.0	35.9	32.0	35.5
N	6	123	9	138

$F_{2,135} = 1.927$

	N	W	S	T
Withdrew	40.0 1	32.5 2		35.0 3

	N	W	S	T
APPLICATION	32.8 5	36.0 121	32.0 9	35.6 135

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	39.0 2	36.1 17		36.4 19
Rejected - Both W & P		27.3 7	32.0 1	27.8 8
DNA for Oral		39.6 8	34.0 1	38.9 9

	N	W	S	T
ORAL	33.0 2	36.3 89	31.7 7	35.9 98

	N	W	S	T
Failed Oral		39.7 7		

	N	W	S	T
ELIGIBLE LIST	33.0 2	36.1 82	31.7 7	35.6 91

	N	W	S	T
Self Removal Before Referral		37.9 24	37.0 1	37.8 25
Still on List w/o Referral	33.0 1	34.0 34	27.0 2	33.5 37

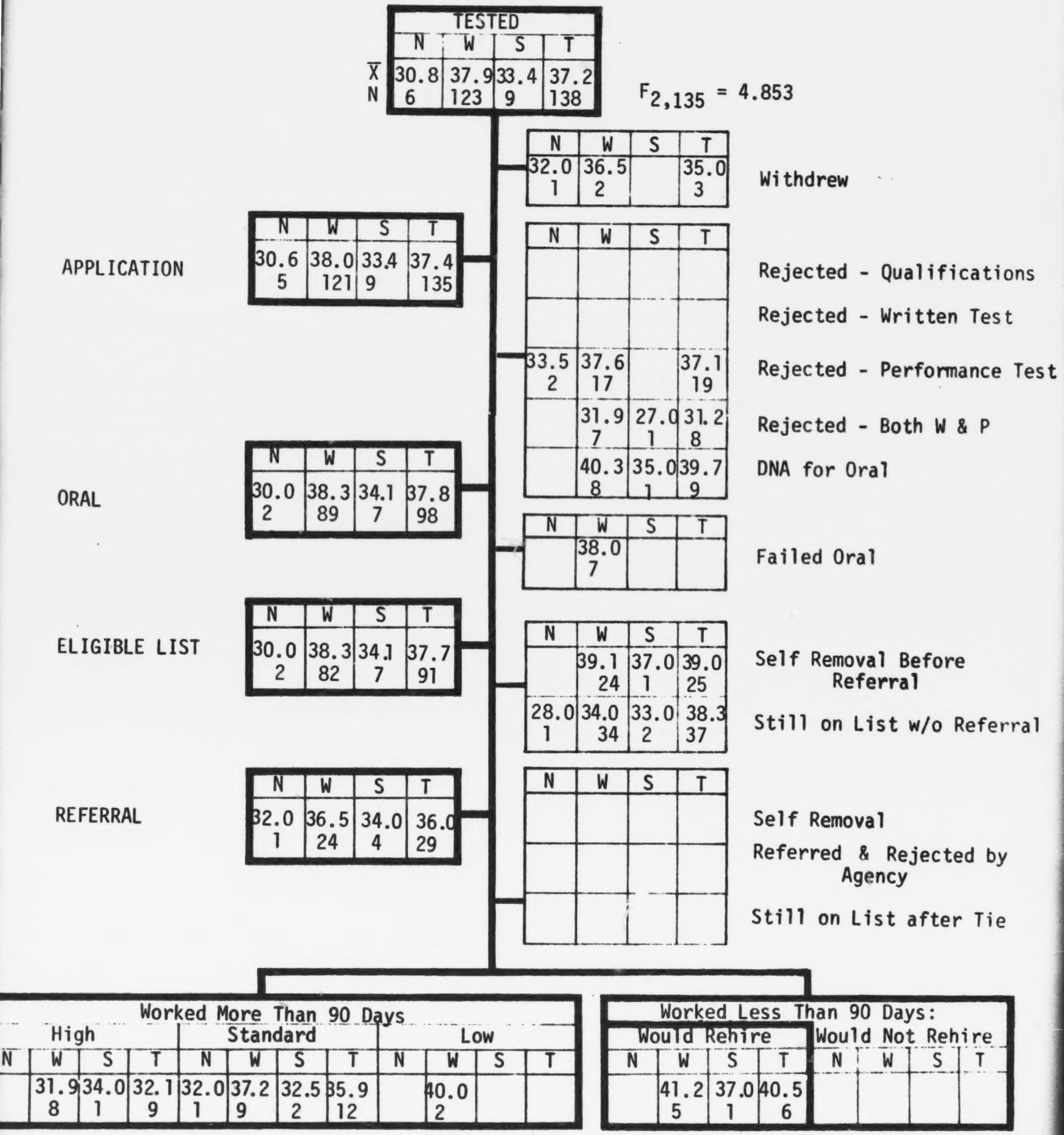
	N	W	S	T
REFERRAL	33.0 1	37.1 24	32.8 4	36.3 29

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	39.4 8	32.0 1	38.5 9	33.0 1	35.7 9	34.5 2	35.2 12		38.5 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	35.4 5	30.0 1	34.5 6				

Graph 39. Book II-A Score by Selection Stage and Ethnic Group - Group One



$F_{2,135} = 4.853$

TESTED

	N	W	S	T
$\overline{X}$	30.8	37.9	33.4	37.2
N	6	123	9	138

APPLICATION

N	W	S	T
30.6 5	38.0 121	33.4 9	37.4 135

	N	W	S	T
Withdrew	32.0 1	36.5 2		35.0 3

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	33.5 2	37.6 17		37.1 19
Rejected - Both W & P		31.9 7	27.0 1	31.2 8
DNA for Oral		40.3 8	35.0 1	39.7 9

ORAL

N	W	S	T
30.0 2	38.3 89	34.1 7	37.8 98

	N	W	S	T
Failed Oral		38.0 7		

ELIGIBLE LIST

N	W	S	T
30.0 2	38.3 82	34.1 7	37.7 91

	N	W	S	T
Self Removal Before Referral		39.1 24	37.0 1	39.0 25
Still on List w/o Referral	28.0 1	34.0 34	33.0 2	38.3 37

REFERRAL

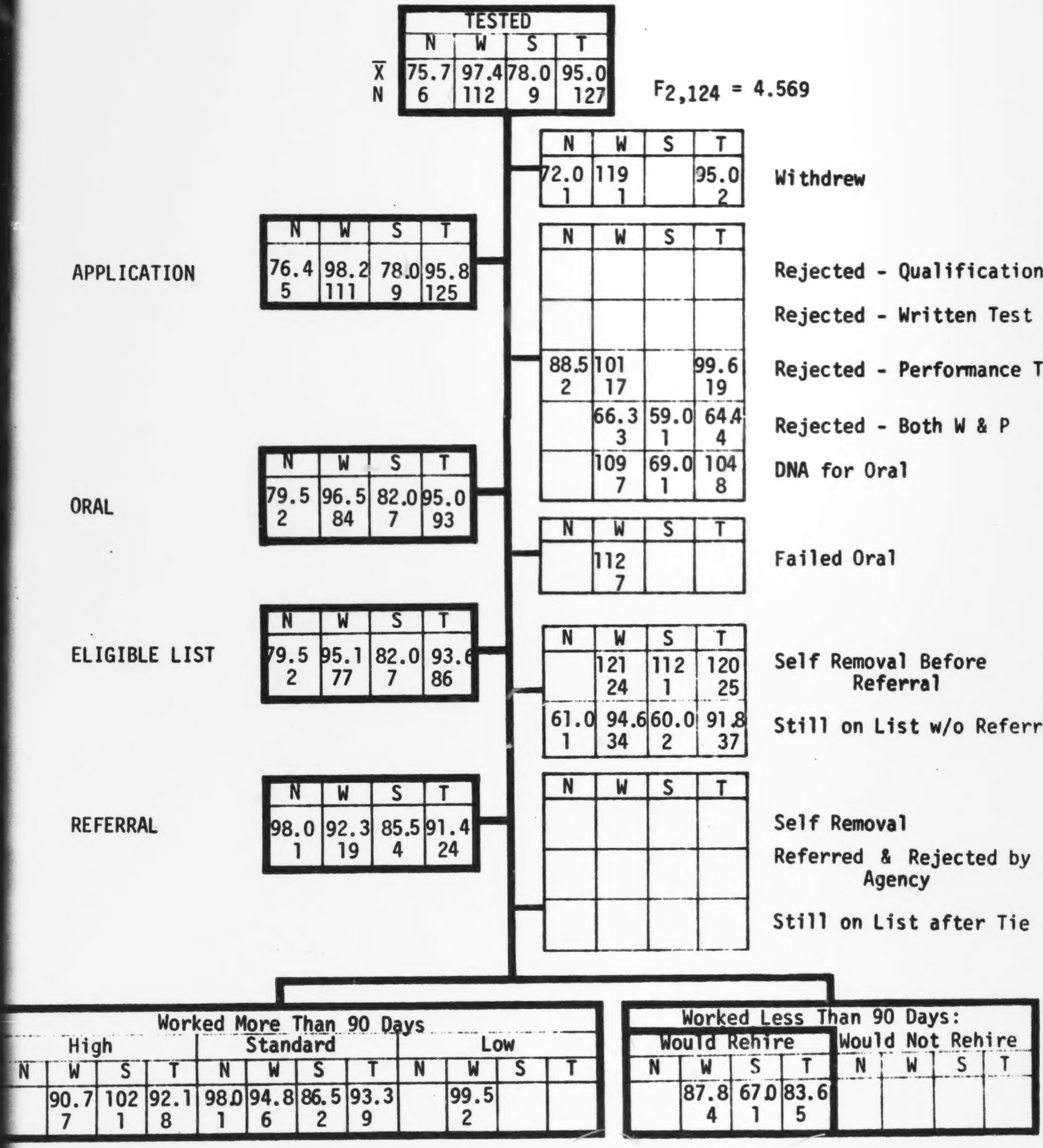
N	W	S	T
32.0 1	36.5 24	34.0 4	36.0 29

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	31.9 8	34.0 1	32.1 9	32.0 1	37.2 9	32.5 2	35.9 12		40.0 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	41.2 5	37.0 1	40.5 6				

Graph 40. Book II-B Score by Selection Stage and Ethnic Group - Group One



TESTED	N	W	S	T
$\bar{X}$	75.7	97.4	78.0	95.0
N	6	112	9	127

$F_{2,124} = 4.569$

	N	W	S	T
Withdrew	72.0 1	119 1		95.0 2

	N	W	S	T
APPLICATION	76.4 5	98.2 111	78.0 9	95.8 125

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	88.5 2	101 17		99.6 19
Rejected - Both W & P		66.3 3	59.0 1	64.4 4
DNA for Oral		109 7	69.0 1	104 8

	N	W	S	T
ORAL	79.5 2	96.5 84	82.0 7	95.0 93

	N	W	S	T
Failed Oral		112 7		

	N	W	S	T
ELIGIBLE LIST	79.5 2	95.1 77	82.0 7	93.6 86

	N	W	S	T
Self Removal Before Referral		121 24	112 1	120 25
Still on List w/o Referral	61.0 1	94.6 34	60.0 2	91.8 37

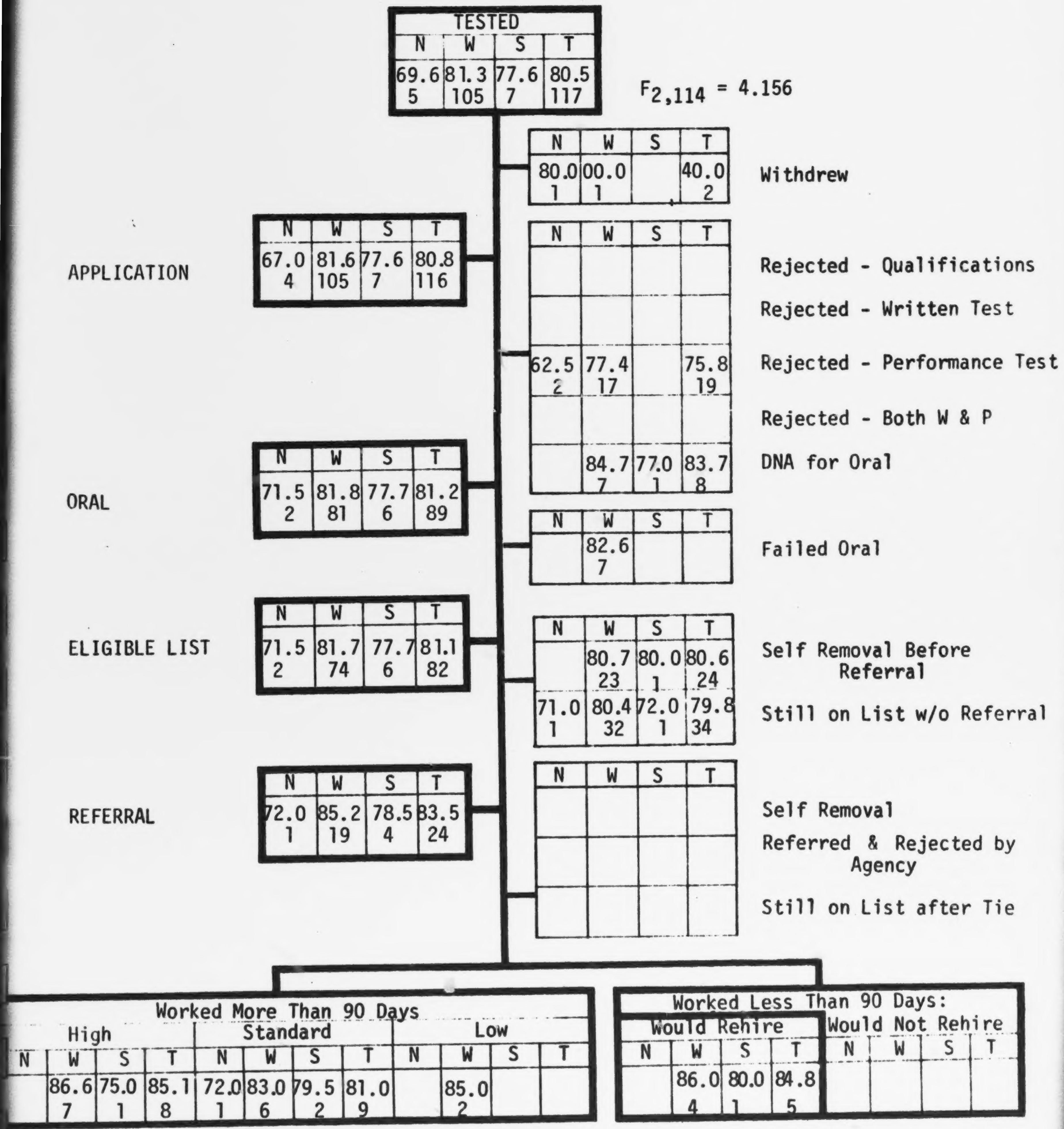
	N	W	S	T
REFERRAL	98.0 1	92.3 19	85.5 4	91.4 24

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	90.7 7	102 1	92.1 8	98.0 1	94.8 6	86.5 2	93.3 9		99.5 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	87.8 4	67.0 1	83.6 5				

Graph 41. Total Raw Score by Selection Stage and Ethnic Group - Group One



$F_{2,114} = 4.156$

TESTED

N	W	S	T
69.6 5	81.3 105	77.6 7	80.5 117

Withdrew

N	W	S	T
80.0 1	00.0 1		40.0 2

APPLICATION

N	W	S	T
67.0 4	81.6 105	77.6 7	80.8 116

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	62.5 2	77.4 17		75.8 19
Rejected - Both W & P				
DNA for Oral		84.7 7	77.0 1	83.7 8

ORAL

N	W	S	T
71.5 2	81.8 81	77.7 6	81.2 89

	N	W	S	T
Failed Oral		82.6 7		

ELIGIBLE LIST

N	W	S	T
71.5 2	81.7 74	77.7 6	81.1 82

	N	W	S	T
Self Removal Before Referral		80.7 23	80.0 1	80.6 24
Still on List w/o Referral	71.0 1	80.4 32	72.0 1	79.8 34

REFERRAL

N	W	S	T
72.0 1	85.2 19	78.5 4	83.5 24

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

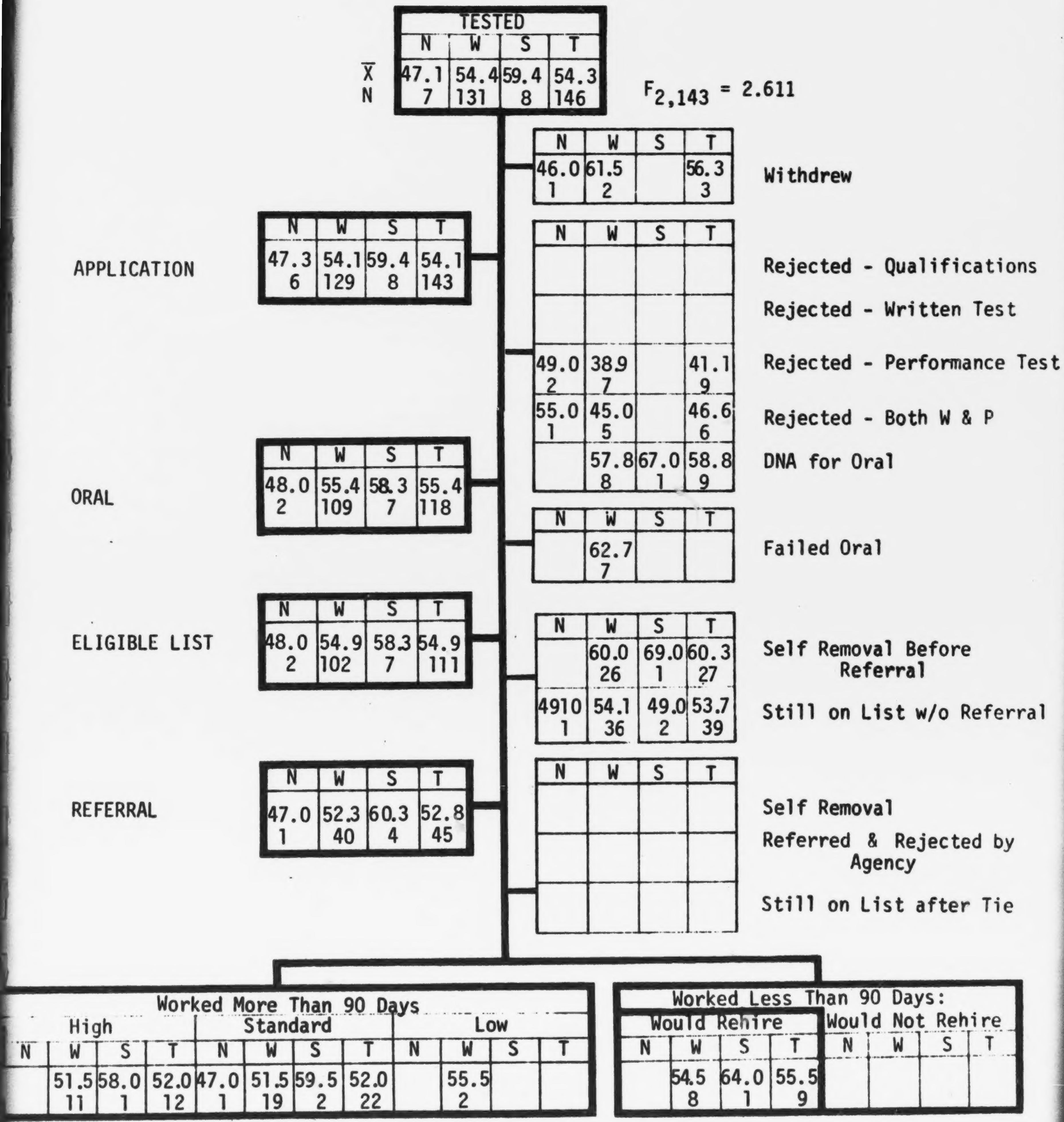
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	86.6 7	75.0 1	85.1 8	72.0 1	83.0 6	79.5 2	81.0 9		85.0 2		

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	86.0 4	80.0 1	84.8 5				

Graph 42. Converted Score by Selection Stage and Ethnic Group - Group One



	TESTED			
	N	W	S	T
$\bar{X}$	47.1	54.4	59.4	54.3
N	7	131	8	146

$F_{2,143} = 2.611$

	N	W	S	T
Withdrew	46.0 1	61.5 2		56.3 3

	N	W	S	T
APPLICATION	47.3 6	54.1 129	59.4 8	54.1 143

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	49.0 2	38.9 7		41.1 9
Rejected - Both W & P	55.0 1	45.0 5		46.6 6
DNA for Oral		57.8 8	67.0 1	58.8 9

	N	W	S	T
ORAL	48.0 2	55.4 109	58.3 7	55.4 118

	N	W	S	T
Failed Oral		62.7 7		

	N	W	S	T
ELIGIBLE LIST	48.0 2	54.9 102	58.3 7	54.9 111

	N	W	S	T
Self Removal Before Referral		60.0 26	69.0 1	60.3 27
Still on List w/o Referral	4910 1	54.1 36	49.0 2	53.7 39

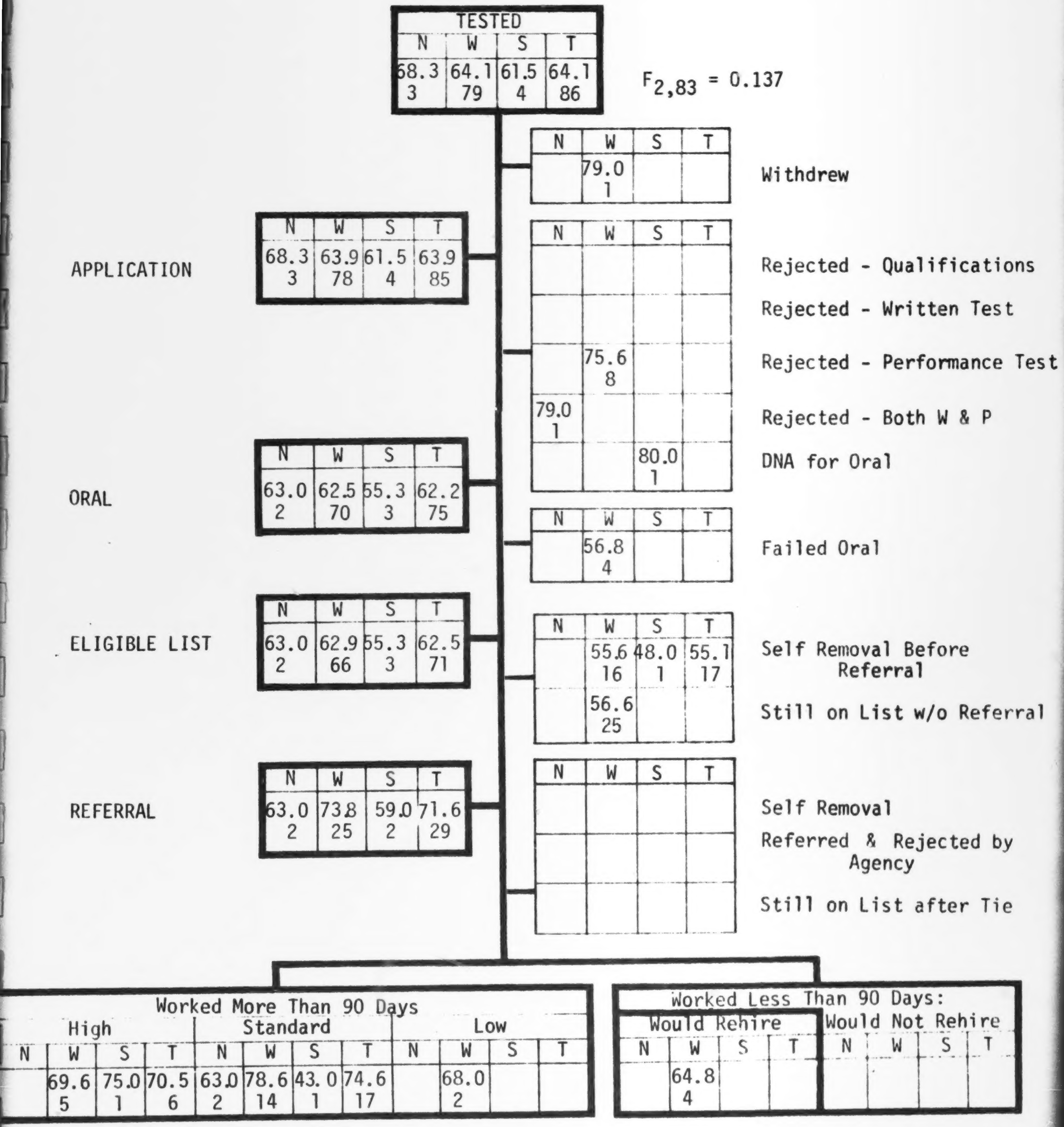
	N	W	S	T
REFERRAL	47.0 1	52.3 40	60.3 4	52.8 45

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	51.5 11	58.0 1	52.0 12	47.0 1	51.5 19	59.5 2	52.0 22		55.5 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	54.5 8	64.0 1	55.5 9				

Graph 43. Typing Score by Selection Stage and Ethnic Group - Group One



TESTED

N	W	S	T
68.3 3	64.1 79	61.5 4	64.1 86

$F_{2,83} = 0.137$

APPLICATION

N	W	S	T
68.3 3	63.9 78	61.5 4	63.9 85

ORAL

N	W	S	T
63.0 2	62.5 70	55.3 3	62.2 75

ELIGIBLE LIST

N	W	S	T
63.0 2	62.9 66	55.3 3	62.5 71

REFERRAL

N	W	S	T
63.0 2	73.8 25	59.0 2	71.6 29

	N	W	S	T
Withdrew		79.0 1		

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		75.6 8		
Rejected - Both W & P	79.0 1			
DNA for Oral			80.0 1	

	N	W	S	T
Failed Oral		56.8 4		

	N	W	S	T
Self Removal Before Referral		55.6 16	48.0 1	55.1 17
Still on List w/o Referral		56.6 25		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

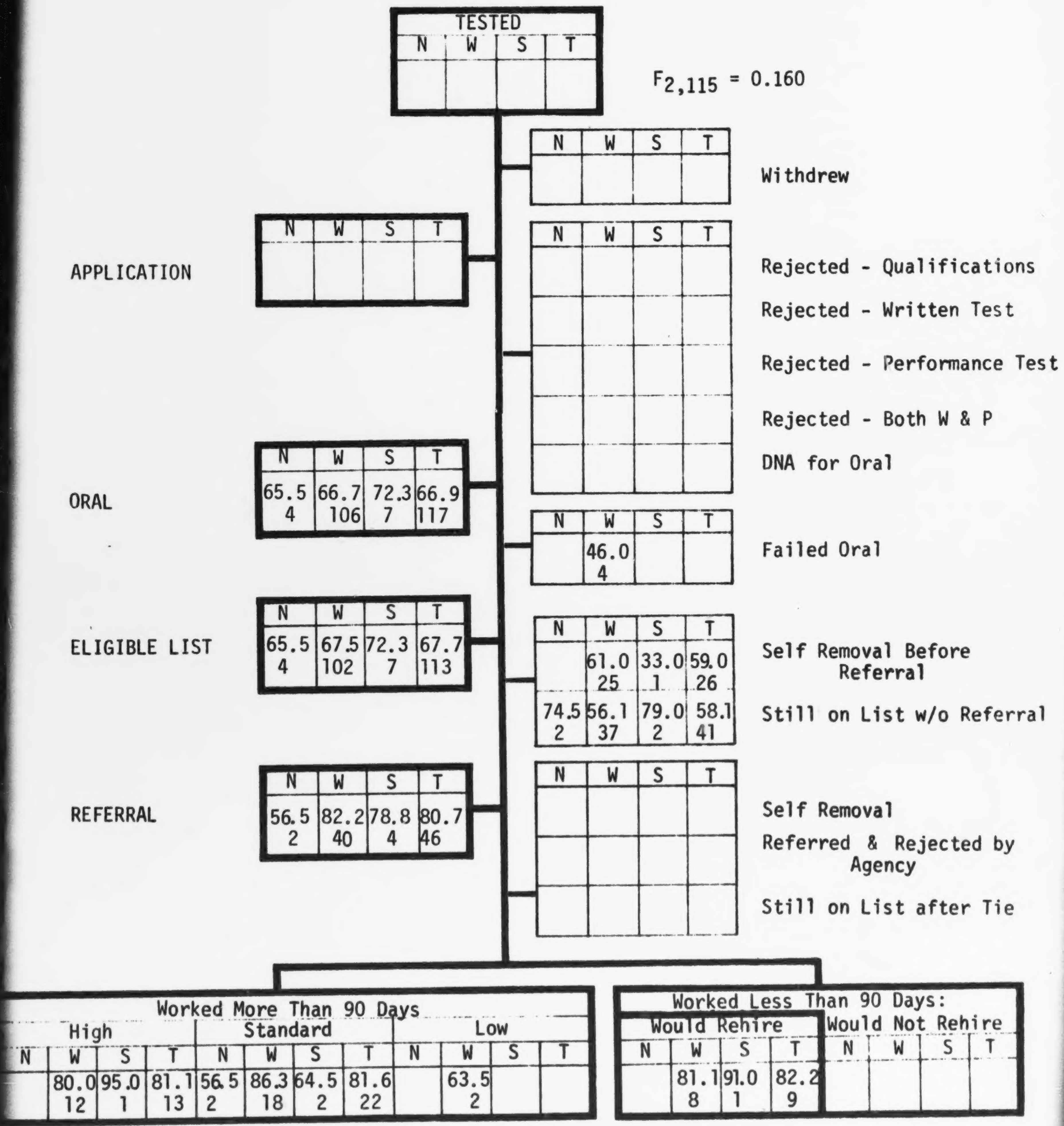
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	69.6 5	75.0 1	70.5 6	63.0 2	78.6 14	43.0 1	74.6 17		68.0 2		

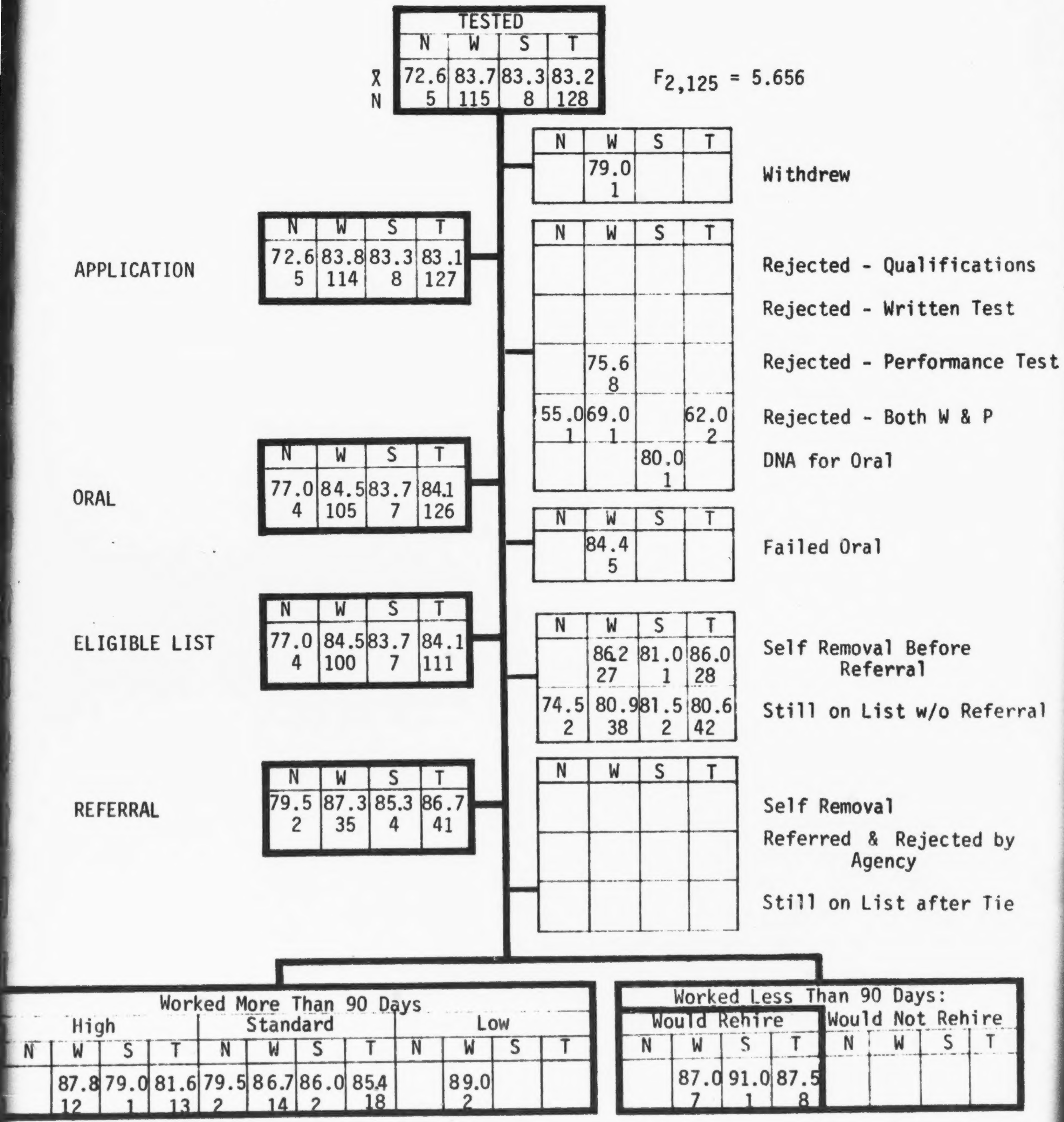
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	64.8 4						

Graph 44. Written Test Score by Selection Stage and Ethnic Group - Group One


TESTED
N W S T
F2,115 = 0.160
N W S T
Withdrew
APPLICATION
N W S T
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
DNA for Oral
ORAL
N W S T
65.5 4
66.7 106
72.3 7
66.9 117
N W S T
46.0 4
Failed Oral
ELIGIBLE LIST
N W S T
65.5 4
67.5 102
72.3 7
67.7 113
N W S T
61.0 25
33.0 1
59.0 26
Self Removal Before Referral
74.5 2
56.1 37
79.0 2
58.1 41
Still on List w/o Referral
REFERRAL
N W S T
56.5 2
82.2 40
78.8 4
80.7 46
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
80.0 12
95.0 1
81.1 13
Standard
N W S T
56.5 2
86.3 18
64.5 2
81.6 22
Low
N W S T
63.5 2
Worked Less Than 90 Days:
Would Rehire
N W S T
81.1 8
91.0 1
82.2 9
Would Not Rehire
N W S T

Graph 45. Oral Rating by Selection Stage and Ethnic Group - Group One



$F_{2,125}$ = 5.656

TESTED

	N	W	S	T
X̄	72.6	83.7	83.3	83.2
N	5	115	8	128

Stage	N	W	S	T
APPLICATION	72.6 5	83.8 114	83.3 8	83.1 127
ORAL	77.0 4	84.5 105	83.7 7	84.1 126
ELIGIBLE LIST	77.0 4	84.5 100	83.7 7	84.1 111
REFERRAL	79.5 2	87.3 35	85.3 4	86.7 41

	N	W	S	T
Withdrew		79.0 1		
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		75.6 8		
Rejected - Both W & P	55.0 1	69.0 1		62.0 2
DNA for Oral			80.0 1	
Failed Oral		84.4 5		
Self Removal Before Referral		86.2 27	81.0 1	86.0 28
Still on List w/o Referral	74.5 2	80.9 38	81.5 2	80.6 42
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

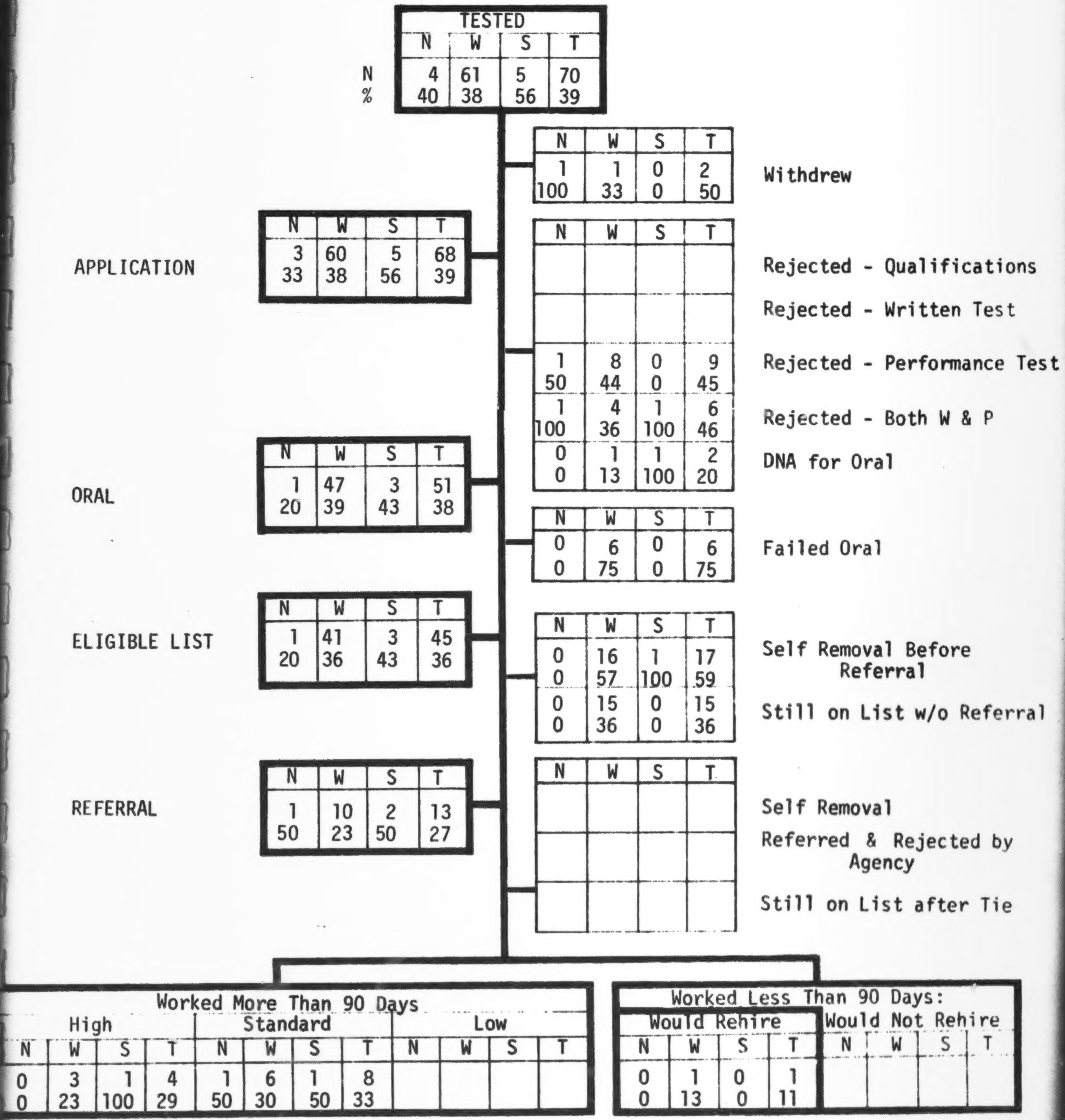
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	87.8 12	79.0 1	81.6 13	79.5 2	86.7 14	86.0 2	85.4 18		89.0 2		

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	87.0 7	91.0 1	87.5 8				

Graph 46. Rounded Value by Selection Stage and Ethnic Group - Group One

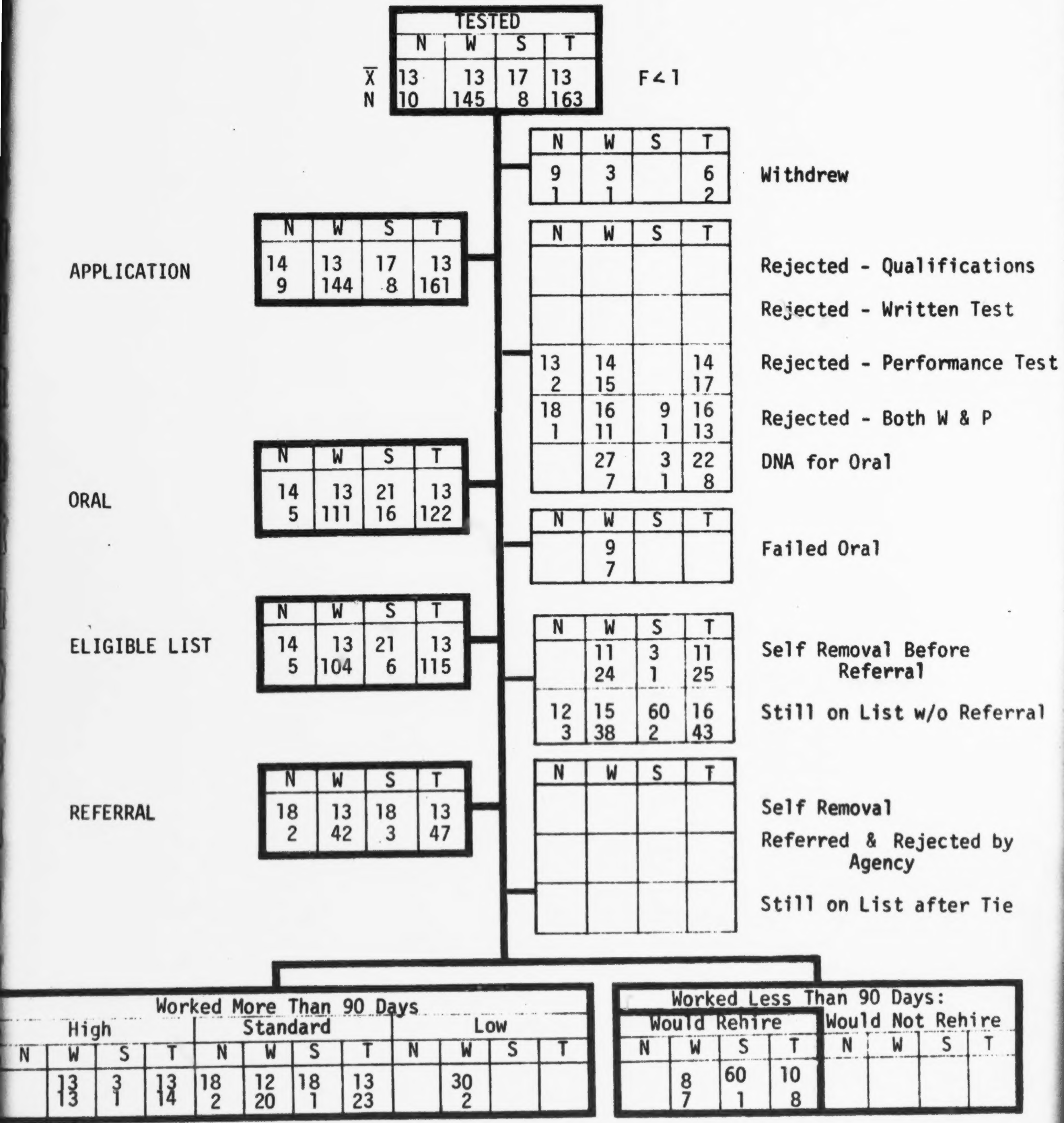


Stage		N	W	S	T
TESTED	N	4	61	5	70
	%	40	38	56	39
Withdrew		1	1	0	2
		100	33	0	50
APPLICATION		3	60	5	68
		33	38	56	39
Rejected - Qualifications					
Rejected - Written Test					
Rejected - Performance Test		1	8	0	9
		50	44	0	45
Rejected - Both W & P		1	4	1	6
		100	36	100	46
DNA for Oral		0	1	1	2
		0	13	100	20
ORAL		1	47	3	51
		20	39	43	38
Failed Oral		0	6	0	6
		0	75	0	75
ELIGIBLE LIST		1	41	3	45
		20	36	43	36
Self Removal Before Referral		0	16	1	17
		0	57	100	59
Still on List w/o Referral		0	15	0	15
		0	36	0	36
REFERRAL		1	10	2	13
		50	23	50	27
Self Removal					
Referred & Rejected by Agency					
Still on List after Tie					

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	3	1	4	1	6	1	8				
0	23	100	29	50	30	50	33				

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	1	0	1				
0	13	0	11				

Graph 47. Marital Status (Yes) by Selection Stage and Ethnic Group - Group One



TESTED

	N	W	S	T
X̄	13	13	17	13
N	10	145	8	163

F<1

	N	W	S	T
Withdrew	9 1	3 1		6 2

APPLICATION

N	W	S	T
14 9	13 144	17 8	13 161

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	13 2	14 15		14 17
Rejected - Both W & P	18 1	16 11	9 1	16 13
DNA for Oral		27 7	3 1	22 8

ORAL

N	W	S	T
14 5	13 111	21 16	13 122

	N	W	S	T
Failed Oral		9 7		

ELIGIBLE LIST

N	W	S	T
14 5	13 104	21 6	13 115

	N	W	S	T
Self Removal Before Referral		11 24	3 1	11 25
Still on List w/o Referral	12 3	15 38	60 2	16 43

REFERRAL

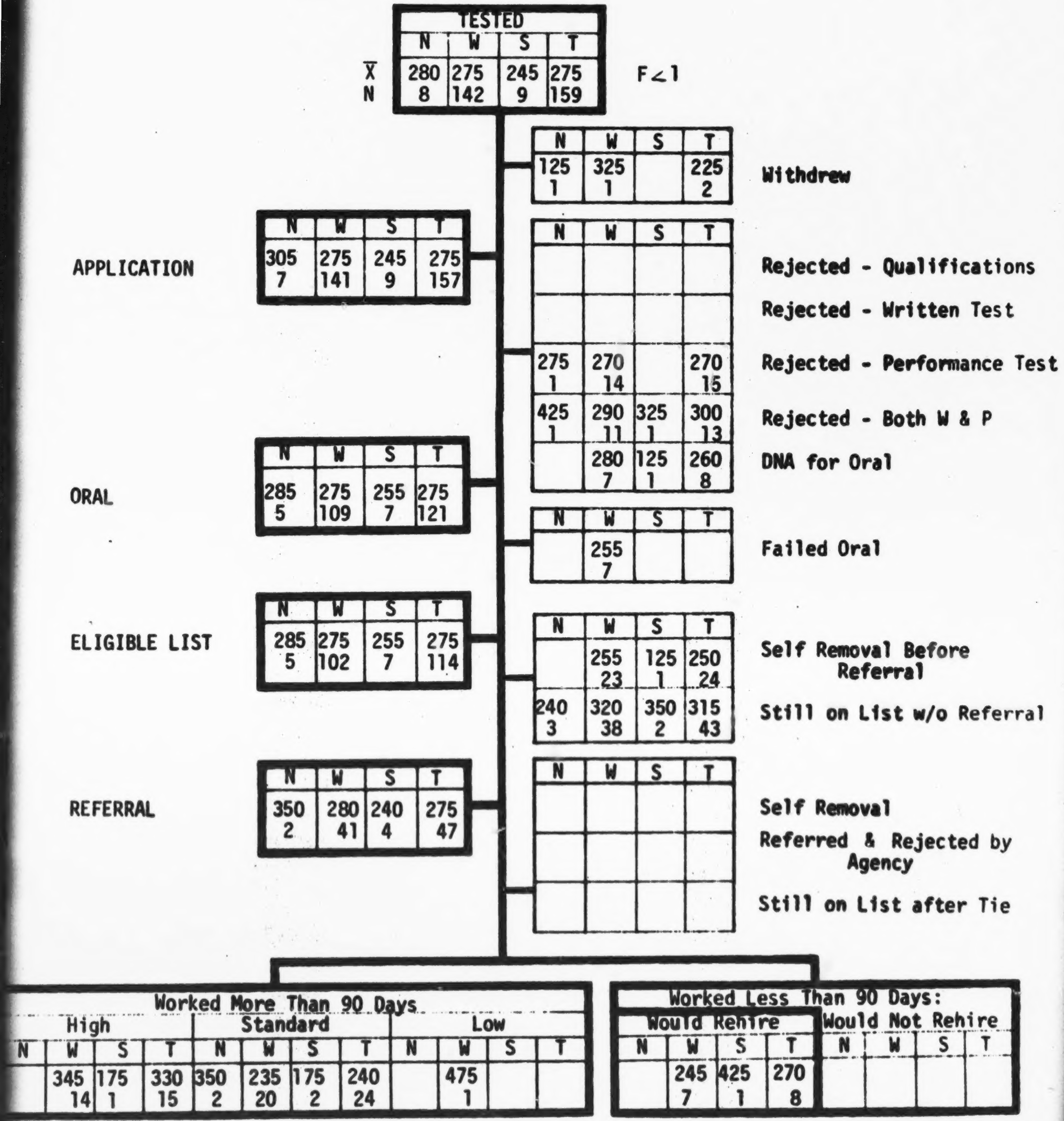
N	W	S	T
18 2	13 42	18 3	13 47

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	13 13	3 1	13 14	18 2	12 20	18 1	13 23		30 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	8 7	60 1	10 8				

Graph 48. Length of Last Employment by Selection Stage and Ethnic Group - Group One



TESTED (F<1)

	N	W	S	T
X̄	280	275	245	275
N	8	142	9	159

APPLICATION

N	W	S	T
305 7	275 141	245 9	275 157

ORAL

N	W	S	T
285 5	275 109	255 7	275 121

ELIGIBLE LIST

N	W	S	T
285 5	275 102	255 7	275 114

REFERRAL

N	W	S	T
350 2	280 41	240 4	275 47

	N	W	S	T
Withdrew	125 1	325 1		225 2

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	275 1	270 14		270 15
Rejected - Both W & P	425 1	290 11	325 1	300 13
DNA for Oral		280 7	125 1	260 8

	N	W	S	T
Failed Oral		255 7		

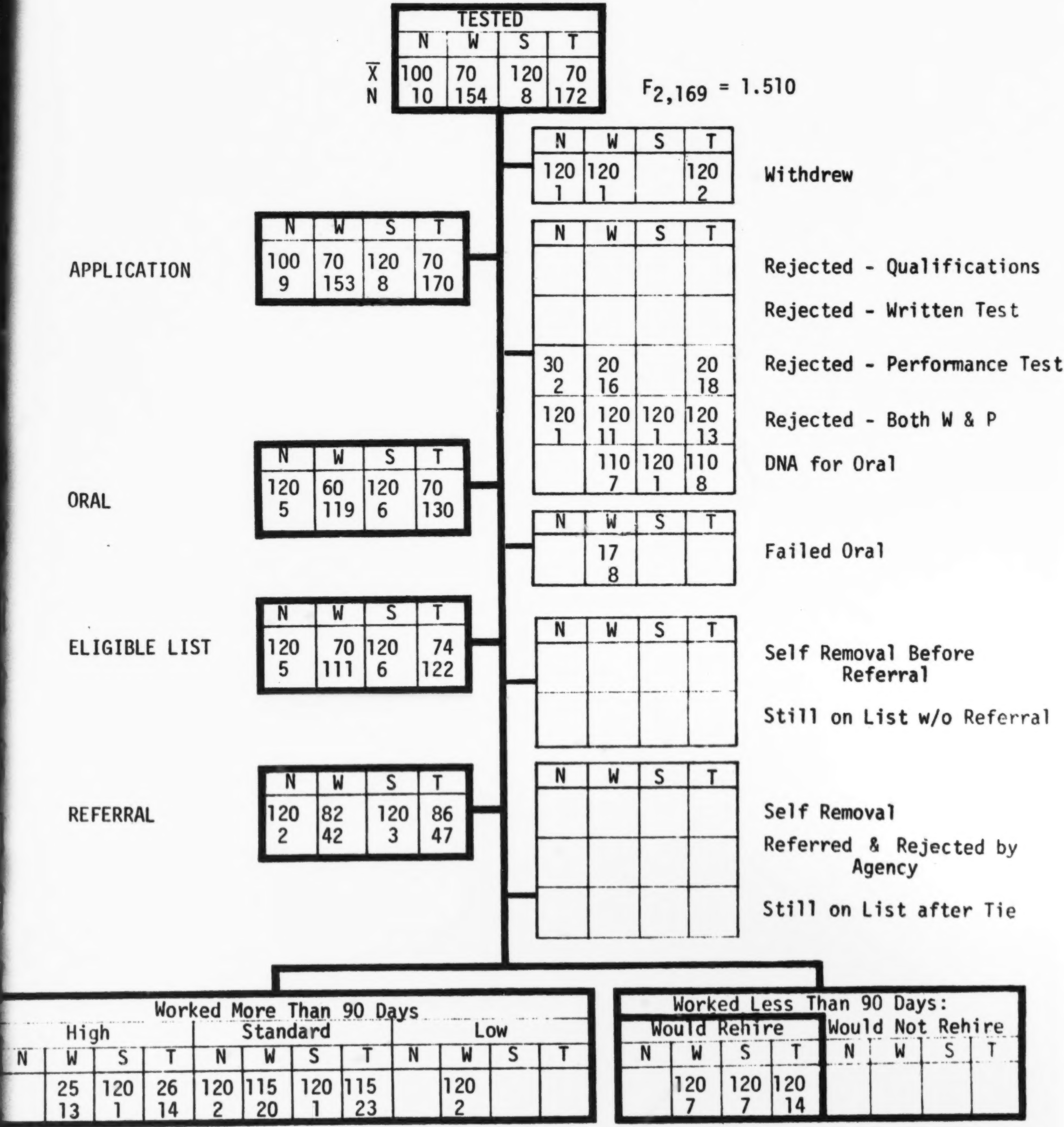
	N	W	S	T
Self Removal Before Referral		255 23	125 1	250 24
Still on List w/o Referral	240 3	320 38	350 2	315 43

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	345 14	175 1	330 15	350 2	235 20	175 2	240 24		475 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	245 7	425 1	270 8				

Graph 49. Salary at Last Employment by Selection Stage and Ethnic Group - Group One



TESTED

	N	W	S	T
$\overline{X}$	100	70	120	70
N	10	154	8	172

$F_{2,169} = 1.510$

Withdrew

N	W	S	T
120 1	120 1		120 2

APPLICATION

N	W	S	T
100 9	70 153	120 8	70 170

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	30 2	20 16		20 18
Rejected - Both W & P	120 1	120 11	120 1	120 13
DNA for Oral		110 7	120 1	110 8

ORAL

N	W	S	T
120 5	60 119	120 6	70 130

Failed Oral

N	W	S	T
	17 8		

ELIGIBLE LIST

N	W	S	T
120 5	70 111	120 6	74 122

	N	W	S	T
Self Removal Before Referral				
Still on List w/o Referral				

REFERRAL

N	W	S	T
120 2	82 42	120 3	86 47

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

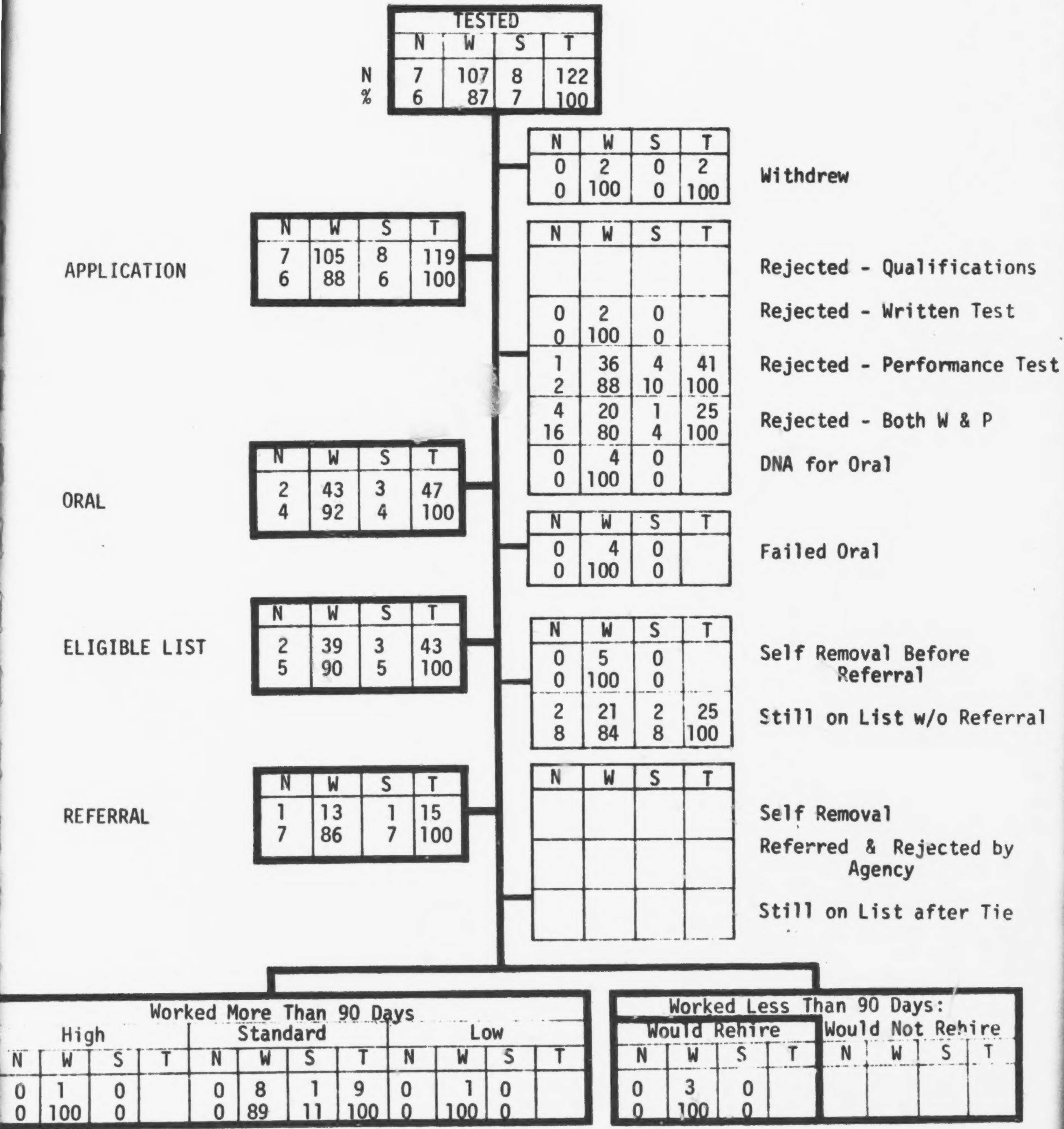
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	25 13	120 1	26 14	120 2	115 20	120 1	115 23		120 2		

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	120 7	120 7	120 14				

Graph 50 . Length of Residence in Colorado by Selection Stage and Ethnic Group - Group One



TESTED

	N	W	S	T
N	7	107	8	122
%	6	87	7	100

Withdrew

N	W	S	T
0	2	0	2
0	100	0	100

APPLICATION

N	W	S	T
7	105	8	119
6	88	6	100

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test	0 0	2 100	0 0	
Rejected - Performance Test	1 2	36 88	4 10	41 100
Rejected - Both W & P	4 16	20 80	1 4	25 100
DNA for Oral	0 0	4 100	0 0	

ORAL

N	W	S	T
2	43	3	47
4	92	4	100

Failed Oral

N	W	S	T
0	4	0	
0	100	0	

ELIGIBLE LIST

N	W	S	T
2	39	3	43
5	90	5	100

	N	W	S	T
Self Removal Before Referral	0 0	5 100	0 0	
Still on List w/o Referral	2 8	21 84	2 8	25 100

REFERRAL

N	W	S	T
1	13	1	15
7	86	7	100

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

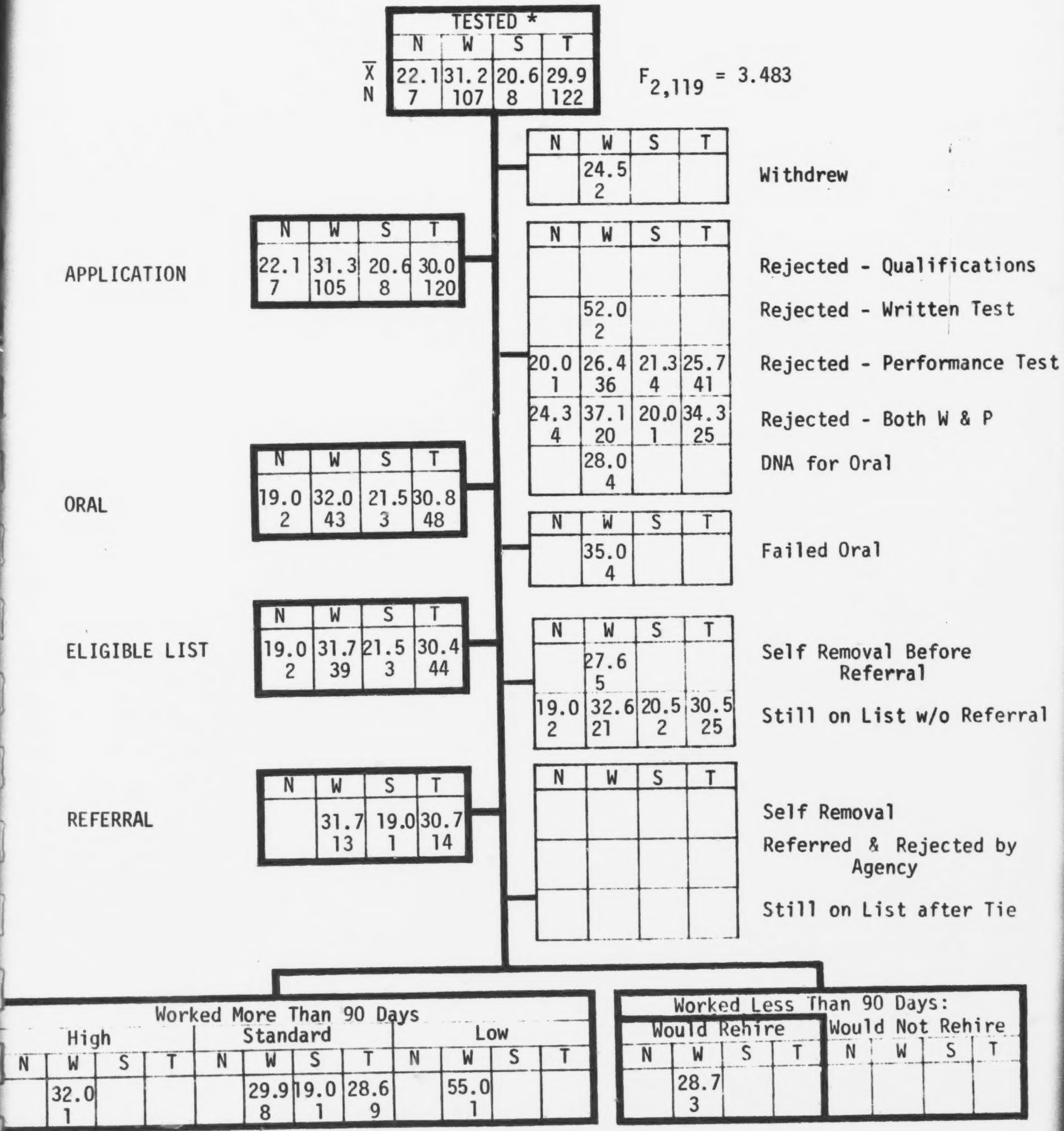
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	1	0		0	8	1	9	0	1	0	
0	100	0		0	89	11	100	0	100	0	

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	3	0					
0	100	0					

Graph 51. Attrition-Survival by Selection Stage and Ethnic Group - Group Two



TESTED *	N	W	S	T
$\overline{X}$	22.1	31.2	20.6	29.9
N	7	107	8	122

$F_{2,119} = 3.483$

	N	W	S	T
APPLICATION	22.1 7	31.3 105	20.6 8	30.0 120
ORAL	19.0 2	32.0 43	21.5 3	30.8 48
ELIGIBLE LIST	19.0 2	31.7 39	21.5 3	30.4 44
REFERRAL		31.7 13	19.0 1	30.7 14

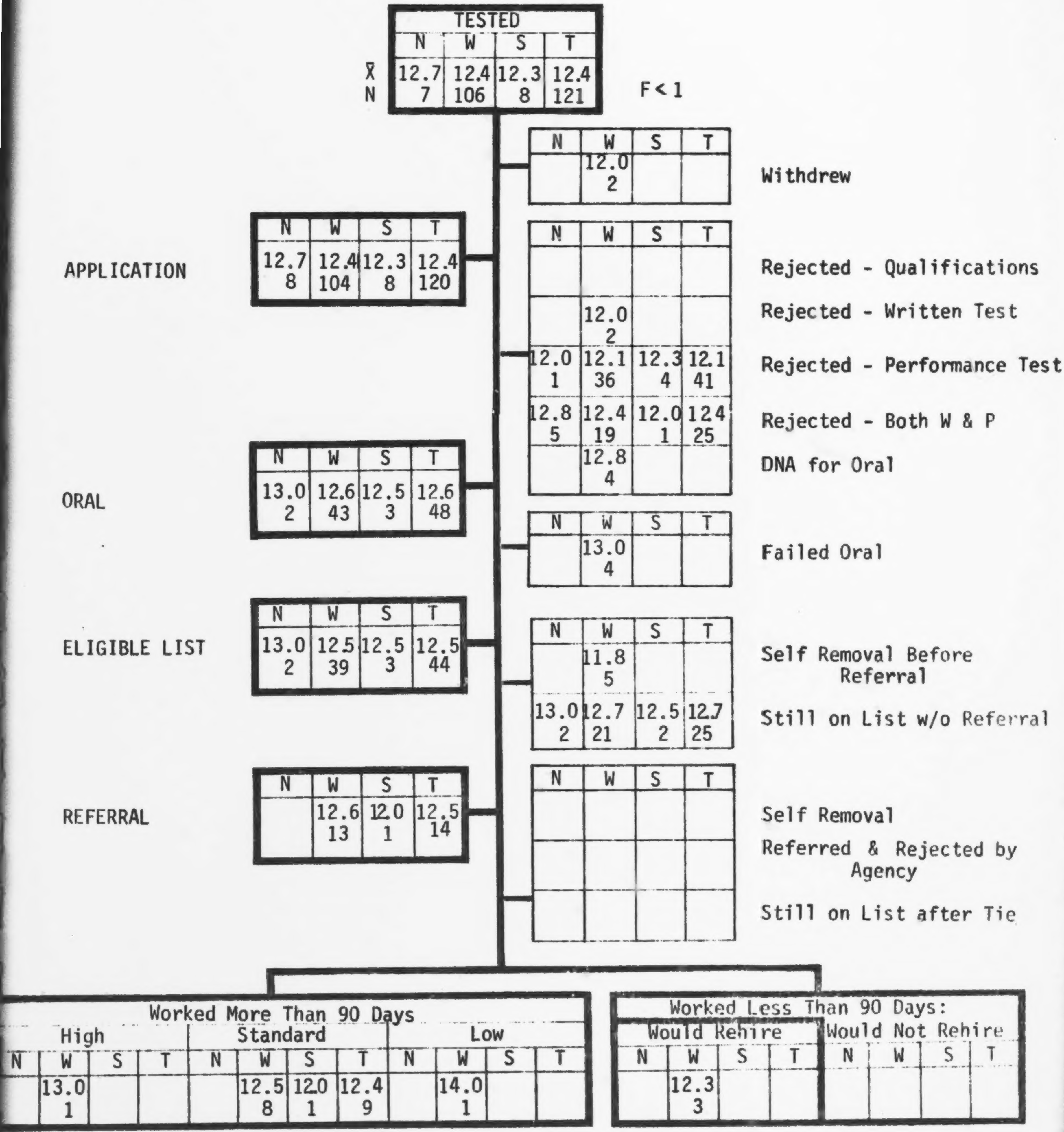
	N	W	S	T
Withdrew		24.5 2		
Rejected - Qualifications				
Rejected - Written Test		52.0 2		
Rejected - Performance Test	20.0 1	26.4 36	21.3 4	25.7 41
Rejected - Both W & P	24.3 4	37.1 20	20.0 1	34.3 25
DNA for Oral		28.0 4		
Failed Oral		35.0 4		
Self Removal Before Referral		27.6 5		
Still on List w/o Referral	19.0 2	32.6 21	20.5 2	30.5 25
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	32.0 1				29.9 8	19.0 1	28.6 9		55.0 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	28.7 3						

Graph 52. Age by Selection Stage and Ethnic Group - Group Two

*Significant at .05 level or beyond



TESTED

	N	W	S	T
X̄	12.7	12.4	12.3	12.4
N	7	106	8	121

F< 1

	N	W	S	T
Withdrew		12.0 2		

	N	W	S	T
APPLICATION	12.7 8	12.4 104	12.3 8	12.4 120

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		12.0 2		
Rejected - Performance Test	12.0 1	12.1 36	12.3 4	12.1 41
Rejected - Both W & P	12.8 5	12.4 19	12.0 1	12.4 25
DNA for Oral		12.8 4		

	N	W	S	T
ORAL	13.0 2	12.6 43	12.5 3	12.6 48

	N	W	S	T
Failed Oral		13.0 4		

	N	W	S	T
ELIGIBLE LIST	13.0 2	12.5 39	12.5 3	12.5 44

	N	W	S	T
Self Removal Before Referral		11.8 5		
Still on List w/o Referral	13.0 2	12.7 21	12.5 2	12.7 25

	N	W	S	T
REFERRAL		12.6 13	12.0 1	12.5 14

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

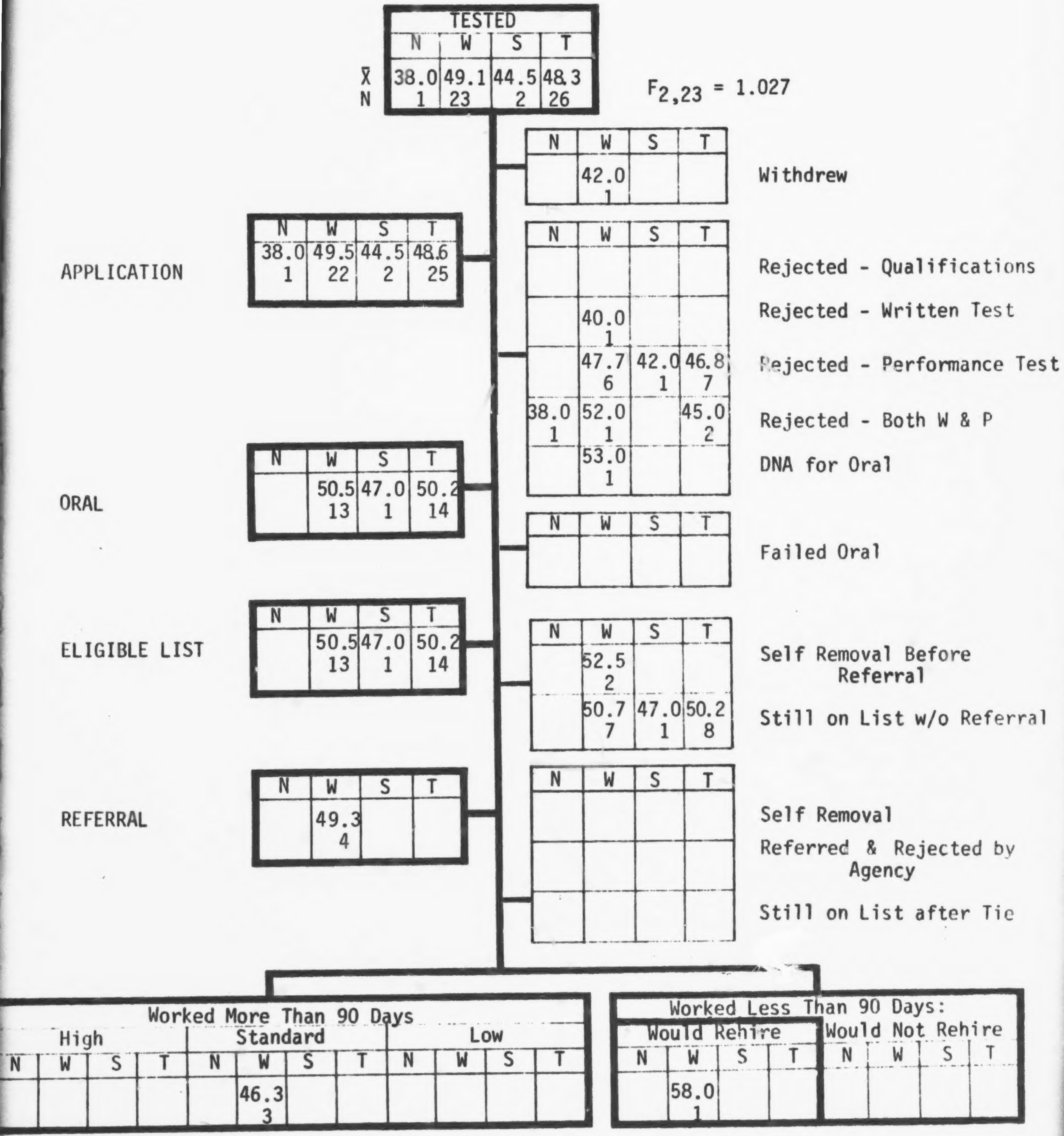
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	13.0 1				12.5 8	12.0 1	12.4 9		14.0 1		

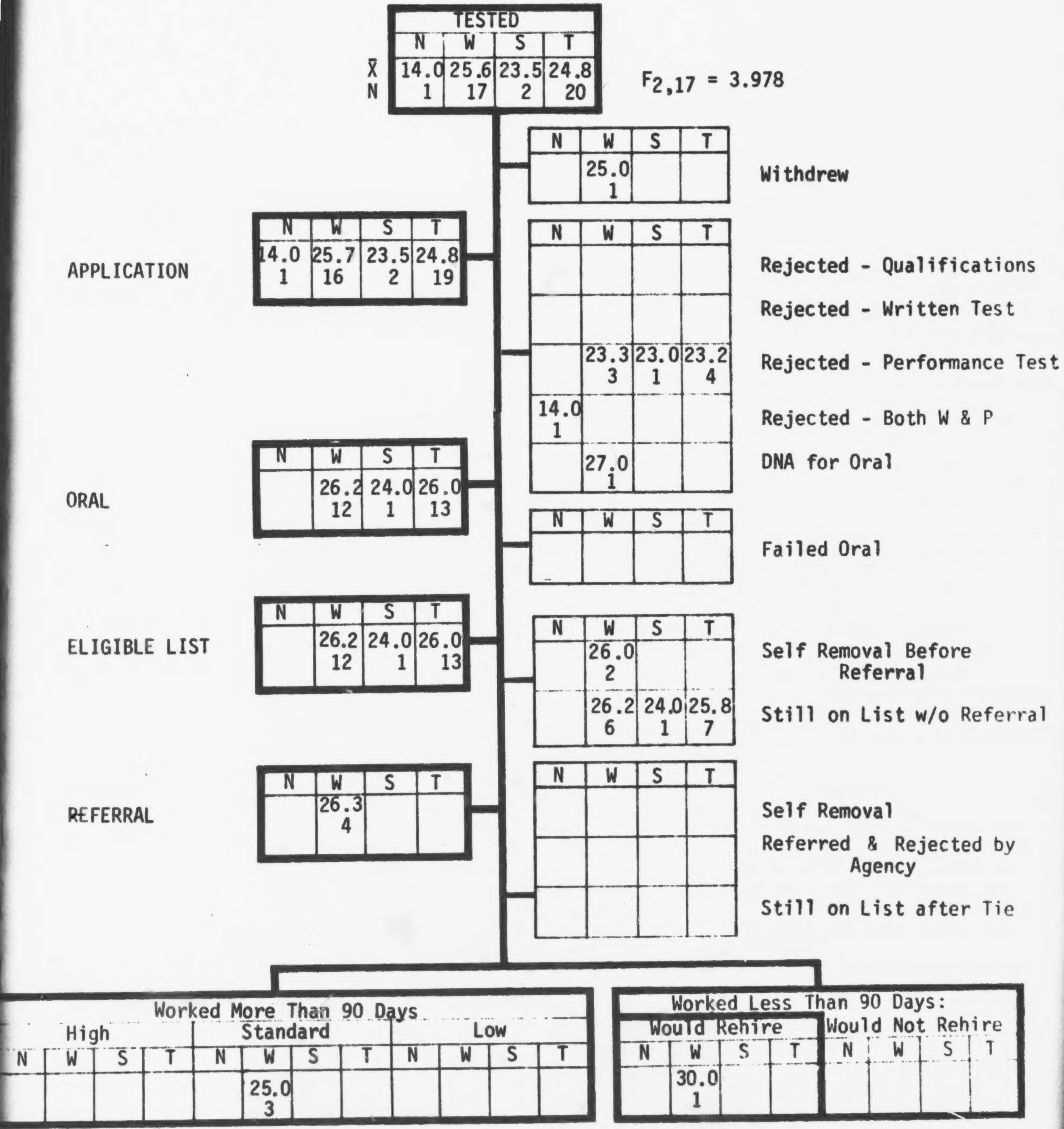
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	12.3 3						

Graph 53. Education by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
X̄ 38.0 49.1 44.5 48.3
N 1 23 2 26
$F_{2,23}$ = 1.027
Withdrew
W 42.0 1
APPLICATION
38.0 49.5 44.5 48.6
1 22 2 25
Rejected - Qualifications
Rejected - Written Test
W 40.0 1
Rejected - Performance Test
W 47.7 6; S 42.0 1; T 46.8 7
Rejected - Both W & P
N 38.0 1; W 52.0 1; T 45.0 2
DNA for Oral
W 53.0 1
ORAL
W 50.5 13; S 47.0 1; T 50.2 14
Failed Oral
ELIGIBLE LIST
W 50.5 13; S 47.0 1; T 50.2 14
Self Removal Before Referral
W 52.5 2
Still on List w/o Referral
W 50.7 7; S 47.0 1; T 50.2 8
REFERRAL
W 49.3 4
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
Standard W 46.3 3
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
Would Rehire W 58.0 1

Graph 54. X - O Score by Selection Stage and Ethnic Group - Group Two



$F_{2,17} = 3.978$

TESTED	N	W	S	T
$\bar{X}$	14.0	25.6	23.5	24.8
N	1	17	2	20

	N	W	S	T
Withdrew		25.0 1		

	N	W	S	T
APPLICATION	14.0 1	25.7 16	23.5 2	24.8 19

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		23.3 3	23.0 1	23.2 4
Rejected - Both W & P	14.0 1			
DNA for Oral		27.0 1		

	N	W	S	T
ORAL		26.2 12	24.0 1	26.0 13

	N	W	S	T
Failed Oral				

	N	W	S	T
ELIGIBLE LIST		26.2 12	24.0 1	26.0 13

	N	W	S	T
Self Removal Before Referral		26.0 2		
Still on List w/o Referral		26.2 6	24.0 1	25.8 7

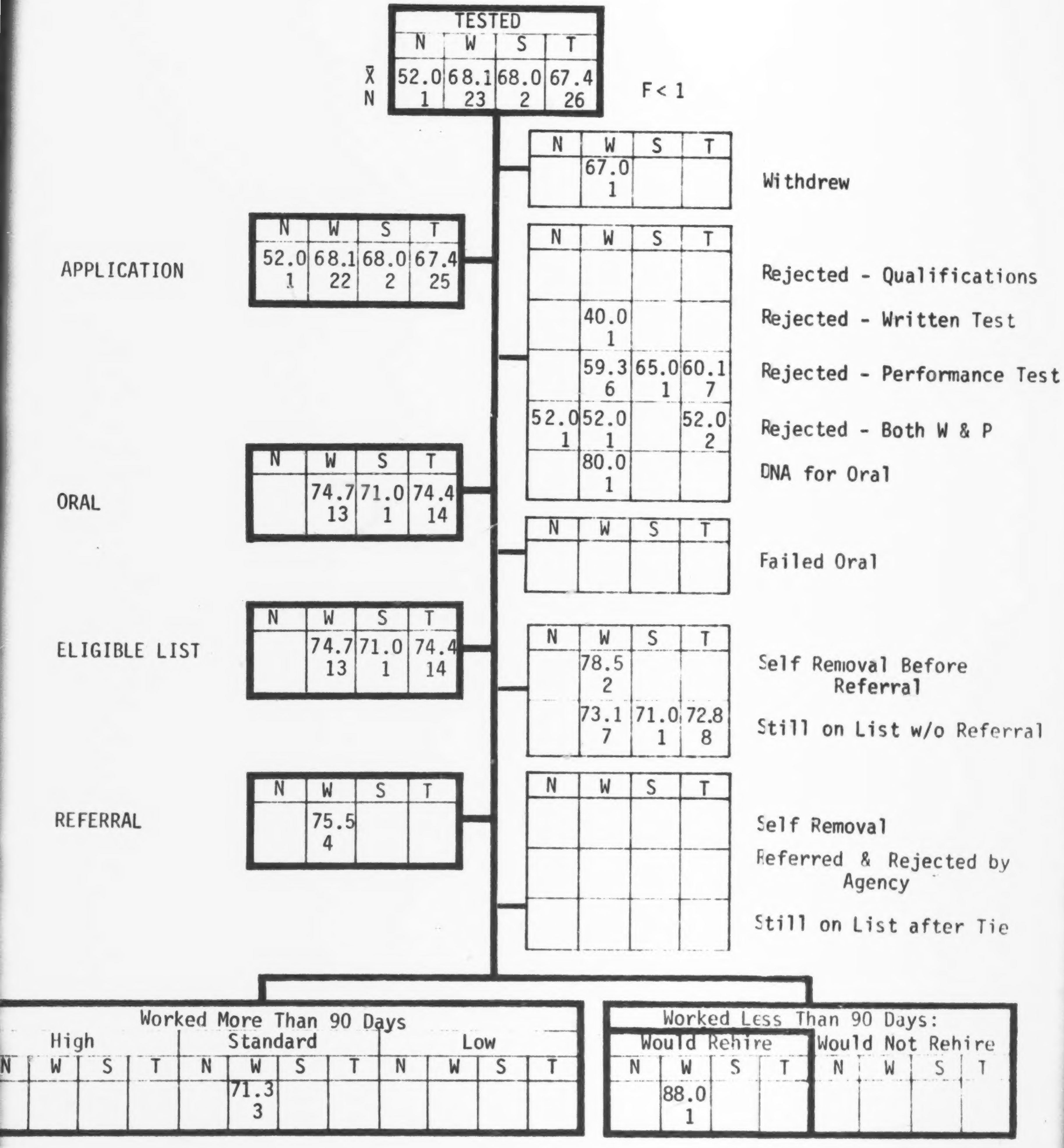
	N	W	S	T
REFERRAL		26.3 4		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					25.0 3						

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	30.0 1						

Graph 55. \$ - ¢ Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
$\bar{X}$	52.0	68.1	68.0	67.4
N	1	23	2	26

F< 1

Withdrew

N	W	S	T
	67.0 1		

APPLICATION

N	W	S	T
52.0 1	68.1 22	68.0 2	67.4 25

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		40.0 1		
Rejected - Performance Test		59.3 6	65.0 1	60.1 7
Rejected - Both W & P	52.0 1	52.0 1		52.0 2
DNA for Oral		80.0 1		

ORAL

N	W	S	T
	74.7 13	71.0 1	74.4 14

Failed Oral

N	W	S	T

ELIGIBLE LIST

N	W	S	T
	74.7 13	71.0 1	74.4 14

	N	W	S	T
Self Removal Before Referral		78.5 2		
Still on List w/o Referral		73.1 7	71.0 1	72.8 8

REFERRAL

N	W	S	T
	75.5 4		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

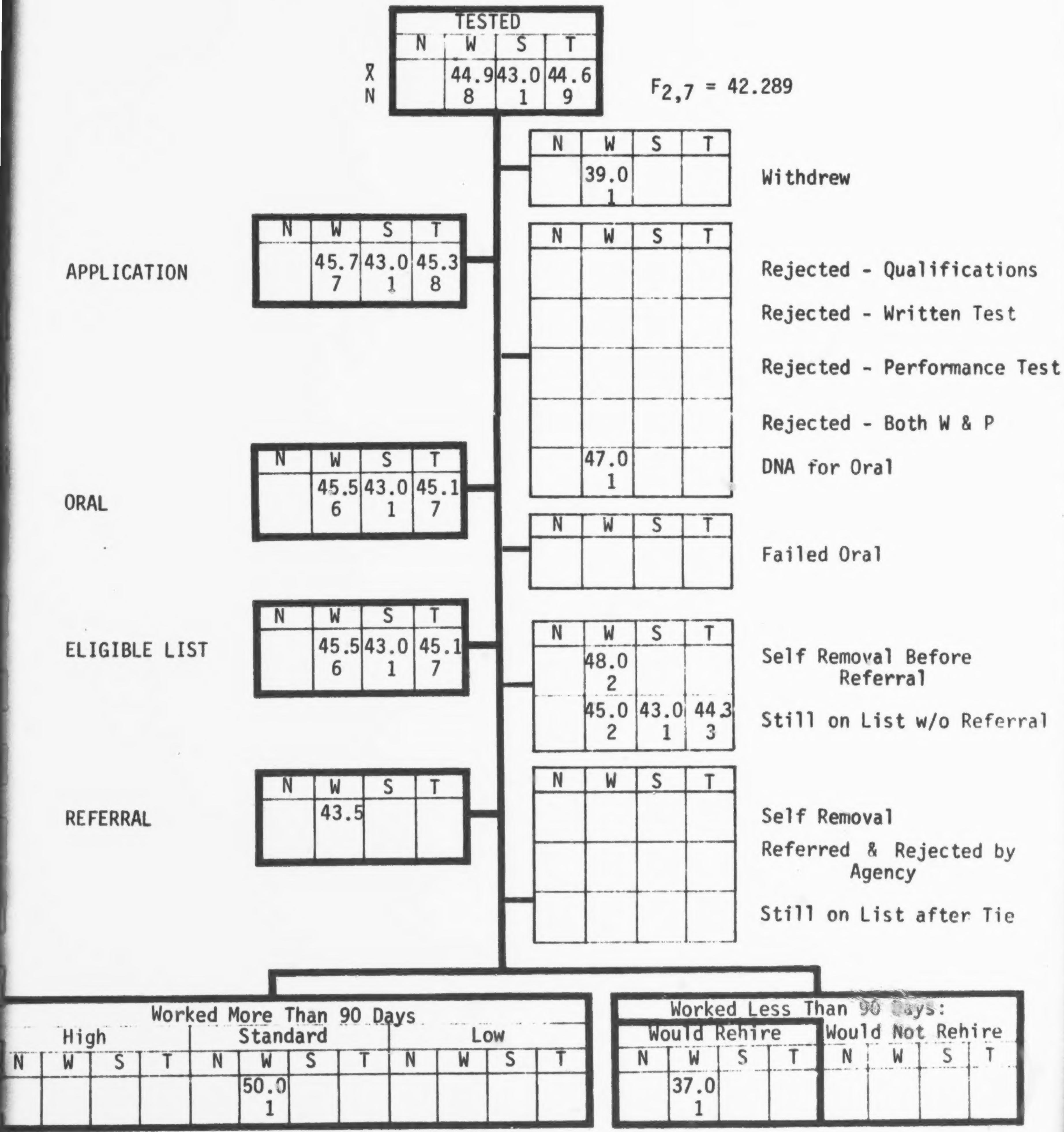
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					71.3 3						

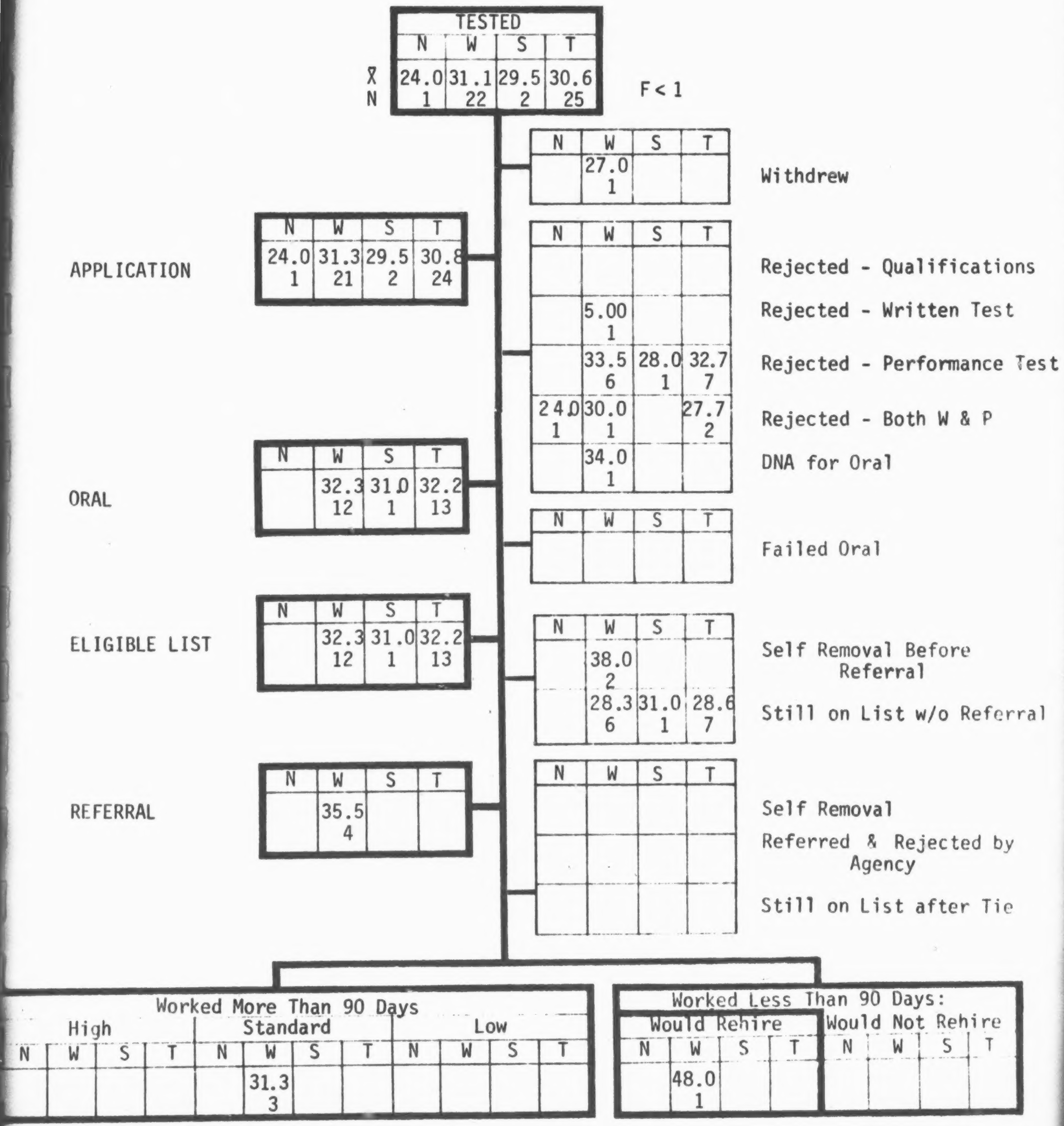
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	88.0 1						

Graph 56. X-O $-¢ Score by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
X̄
N
44.9 43.0 44.6
8 1 9
$F_{2,7}$ = 42.289
N W S T
39.0
1
Withdrew
APPLICATION
N W S T
45.7 43.0 45.3
7 1 8
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
DNA for Oral
47.0
1
ORAL
N W S T
45.5 43.0 45.1
6 1 7
Failed Oral
ELIGIBLE LIST
N W S T
45.5 43.0 45.1
6 1 7
Self Removal Before Referral
48.0
2
Still on List w/o Referral
45.0 43.0 44.3
2 1 3
REFERRAL
N W S T
43.5
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
N W S T N W S T N W S T
50.0
1
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
N W S T N W S T
37.0
1

Graph 57. Visual Memory Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
$\bar{X}$	24.0	31.1	29.5	30.6
N	1	22	2	25

F < 1

Withdrew

N	W	S	T
	27.0 1		

APPLICATION

N	W	S	T
24.0 1	31.3 21	29.5 2	30.8 24

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		5.00 1		
Rejected - Performance Test		33.5 6	28.0 1	32.7 7
Rejected - Both W & P	24.0 1	30.0 1		27.7 2
DNA for Oral		34.0 1		

ORAL

N	W	S	T
	32.3 12	31.0 1	32.2 13

Failed Oral

N	W	S	T

ELIGIBLE LIST

N	W	S	T
	32.3 12	31.0 1	32.2 13

	N	W	S	T
Self Removal Before Referral		38.0 2		
Still on List w/o Referral		28.3 6	31.0 1	28.6 7

REFERRAL

N	W	S	T
	35.5 4		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

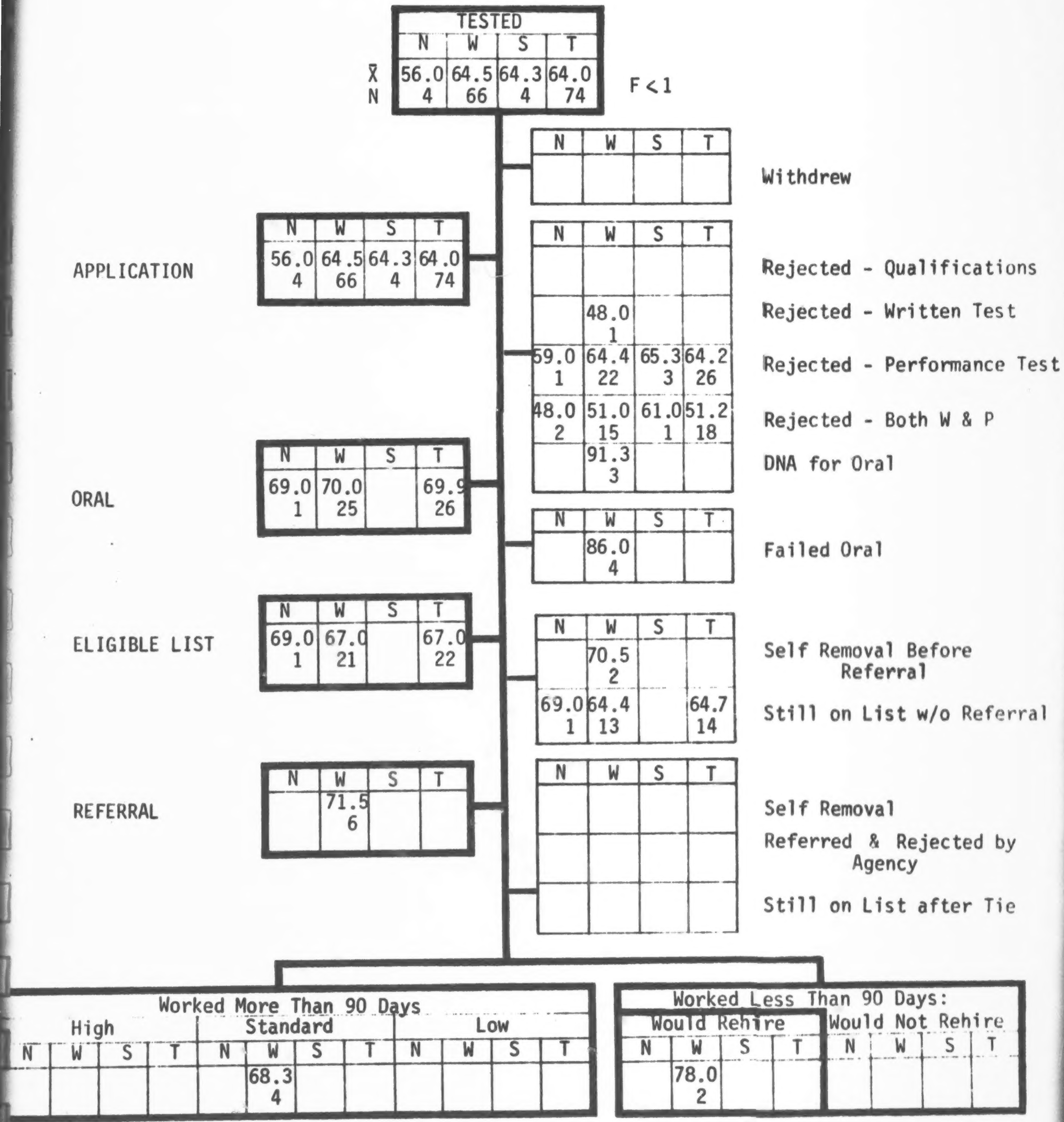
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					31.3 3						

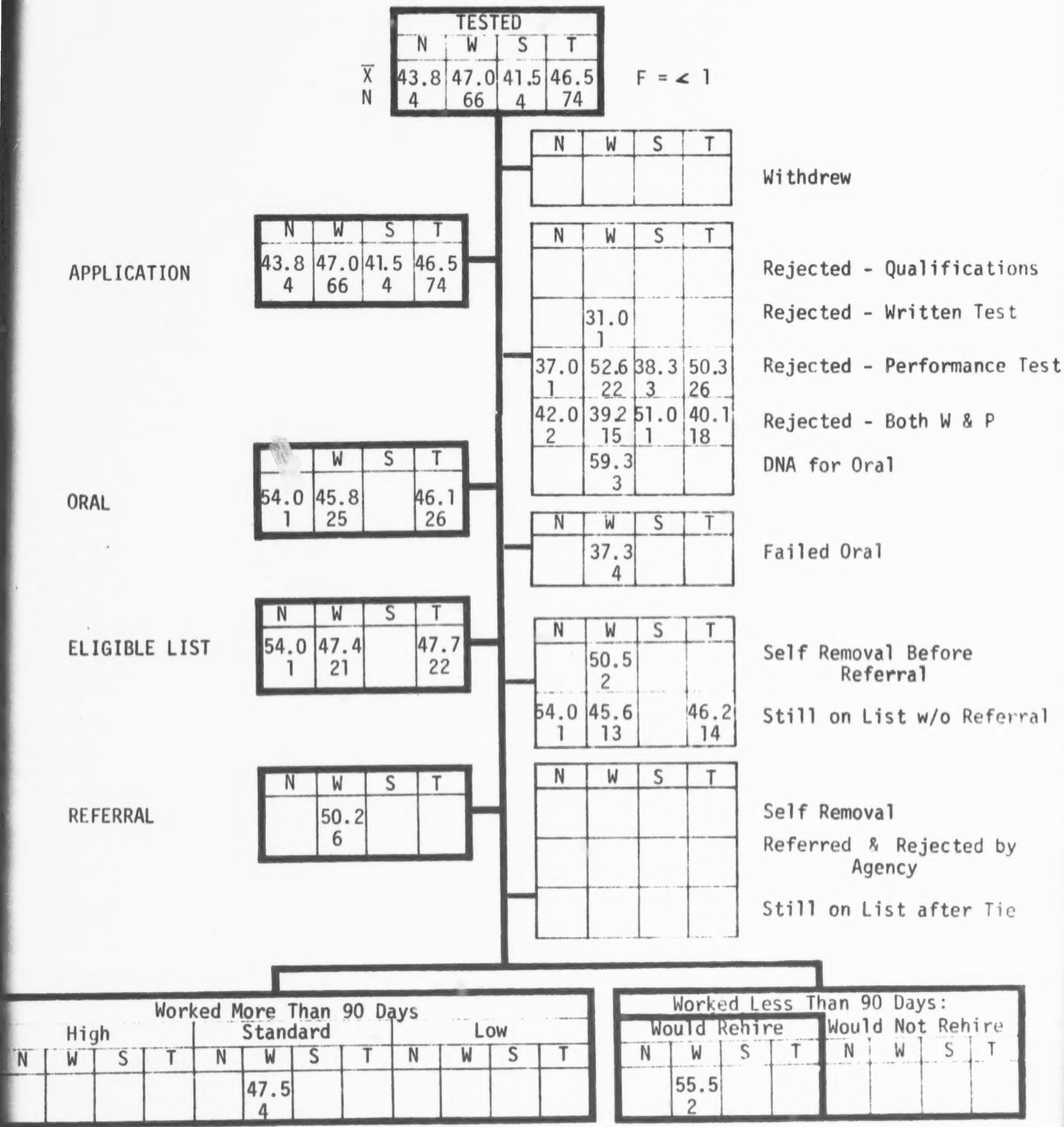
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	48.0 1						

Graph 58. Matrices Score by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
X̄ 56.0 64.5 64.3 64.0
N 4 66 4 74
F<1
Withdrew
APPLICATION
56.0 64.5 64.3 64.0
4 66 4 74
Rejected - Qualifications
Rejected - Written Test
48.0 1
Rejected - Performance Test
59.0 1 | 64.4 22 | 65.3 3 | 64.2 26
Rejected - Both W & P
48.0 2 | 51.0 15 | 61.0 1 | 51.2 18
DNA for Oral
91.3 3
ORAL
69.0 1 | 70.0 25 | | 69.9 26
Failed Oral
86.0 4
ELIGIBLE LIST
69.0 1 | 67.0 21 | | 67.0 22
Self Removal Before Referral
70.5 2
Still on List w/o Referral
69.0 1 | 64.4 13 | | 64.7 14
REFERRAL
71.5 6
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
68.3 4
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
78.0 2

Graph 59. Book 1-A Score by Selection Stage and Ethnic Group - Group Two



F = < 1

TESTED	N	W	S	T
$\overline{X}$	43.8	47.0	41.5	46.5
N	4	66	4	74

APPLICATION	N	W	S	T
	43.8 4	47.0 66	41.5 4	46.5 74

ORAL		W	S	T
	54.0 1	45.8 25		46.1 26

ELIGIBLE LIST	N	W	S	T
	54.0 1	47.4 21		47.7 22

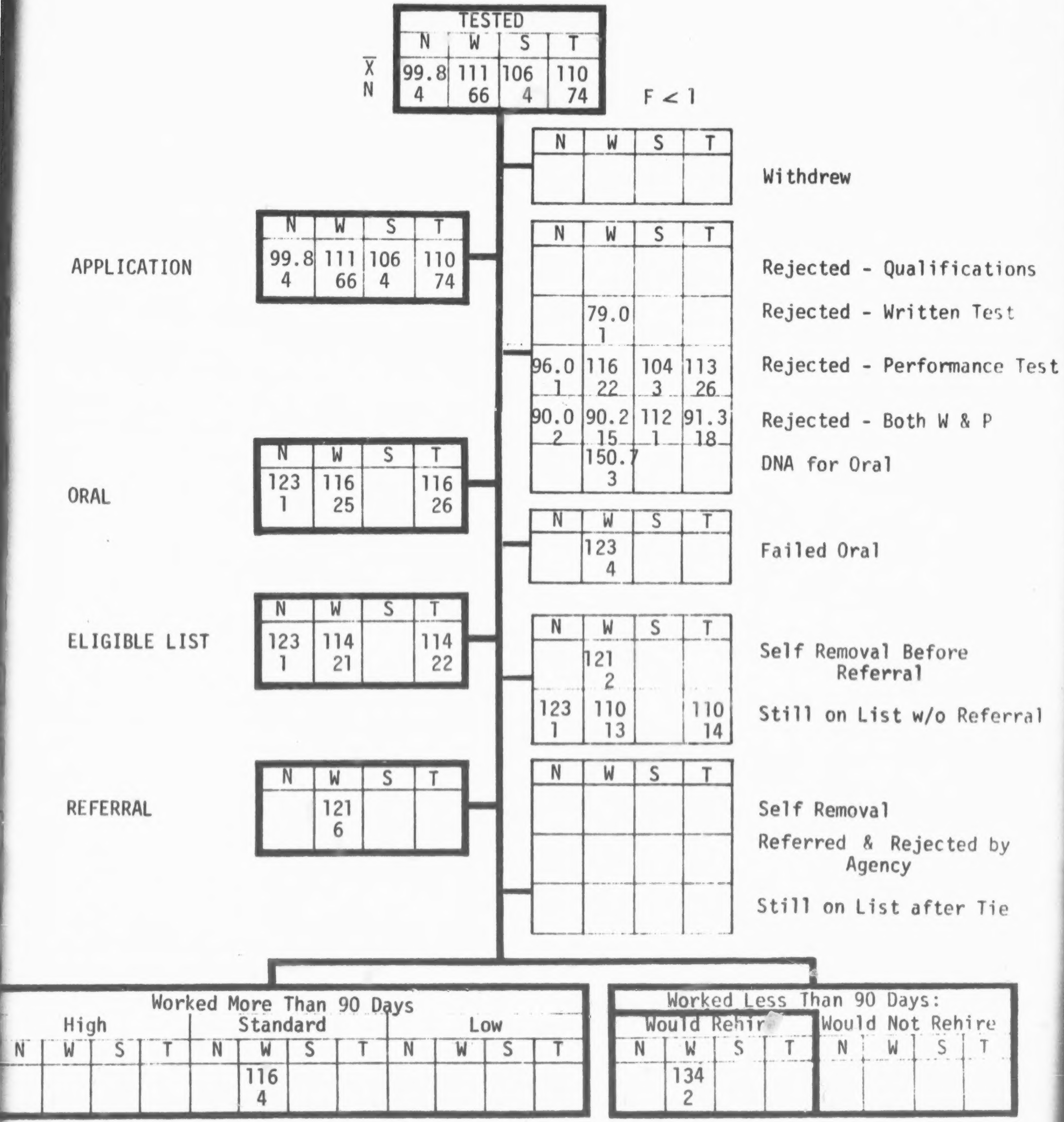
REFERRAL	N	W	S	T
		50.2 6		

	N	W	S	T
Withdrew				
Rejected - Qualifications				
Rejected - Written Test		31.0 1		
Rejected - Performance Test	37.0 1	52.6 22	38.3 3	50.3 26
Rejected - Both W & P	42.0 2	39 2 15	51.0 1	40.1 18
DNA for Oral		59.3 3		
Failed Oral		37.3 4		
Self Removal Before Referral		50.5 2		
Still on List w/o Referral	54.0 1	45.6 13		46.2 14
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					47.5 4						

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	55.5 2						

Graph 60. Book I-B Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
$\overline{X}$	99.8	111	106	110
N	4	66	4	74

F < 1

Stage	N	W	S	T
APPLICATION	99.8 4	111 66	106 4	110 74
ORAL	123 1	116 25		116 26
ELIGIBLE LIST	123 1	114 21		114 22
REFERRAL		121 6		

Outcome	N	W	S	T
Withdrew				
Rejected - Qualifications				
Rejected - Written Test		79.0 1		
Rejected - Performance Test	96.0 1	116 22	104 3	113 26
Rejected - Both W & P	90.0 2	90.2 15	112 1	91.3 18
DNA for Oral		150.7 3		
Failed Oral		123 4		
Self Removal Before Referral		121 2		
Still on List w/o Referral	123 1	110 13		110 14
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

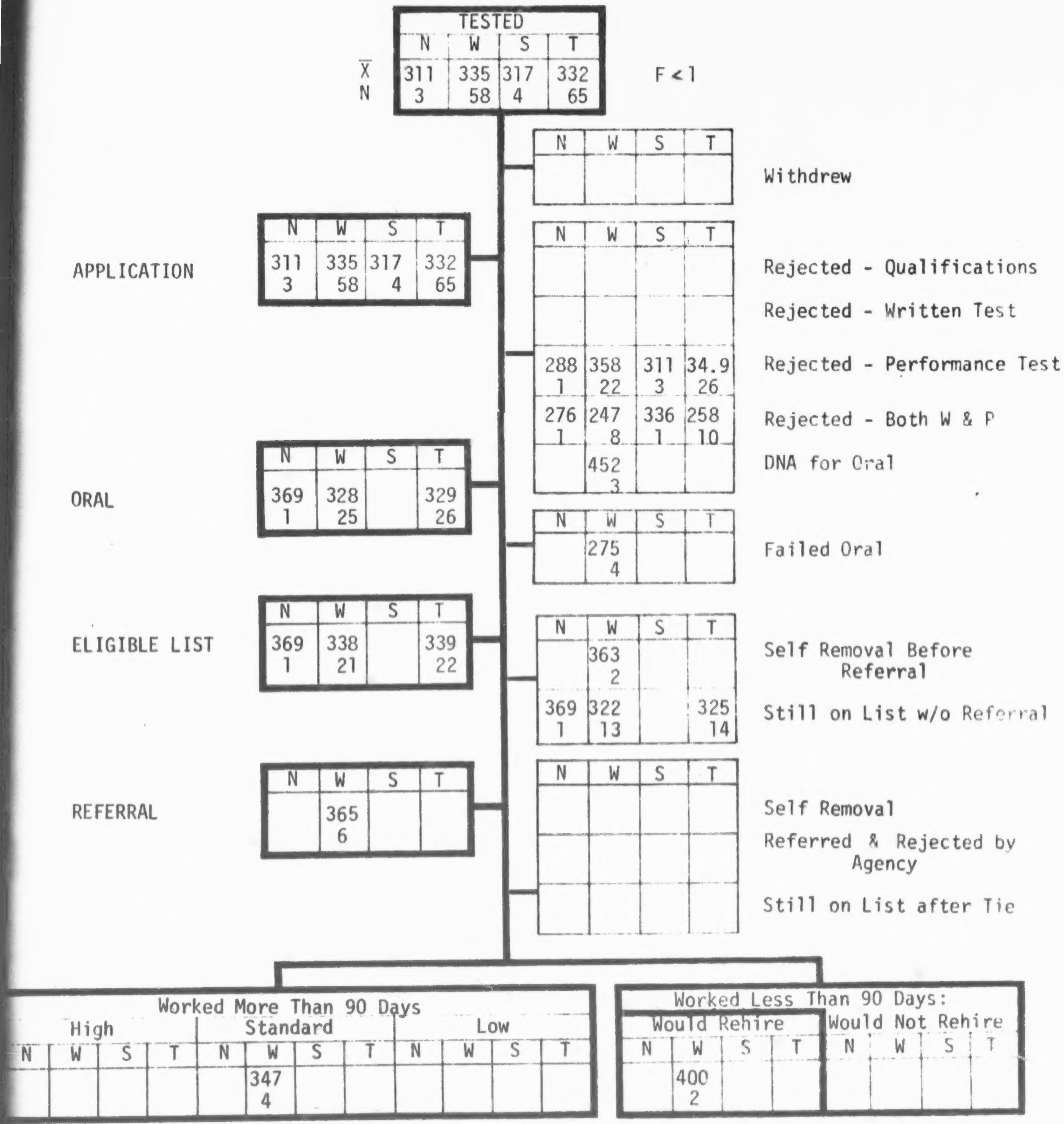
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					116 4						

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	134 2						

Graph 61. Book A and B Combined Score by Selection Stage and Ethnic Group - Group Two



TESTED	N	W	S	T
$\overline{X}$	311	335	317	332
N	3	58	4	65

F < 1

Withdrew	N	W	S	T

APPLICATION	N	W	S	T
	311 3	335 58	317 4	332 65

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test	288 1	358 22	311 3	34.9 26
Rejected - Both W & P	276 1	247 8	336 1	258 10
DNA for Oral		452 3		

ORAL	N	W	S	T
	369 1	328 25		329 26

Failed Oral	N	W	S	T
		275 4		

ELIGIBLE LIST	N	W	S	T
	369 1	338 21		339 22

	N	W	S	T
Self Removal Before Referral		363 2		
Still on List w/o Referral	369 1	322 13		325 14

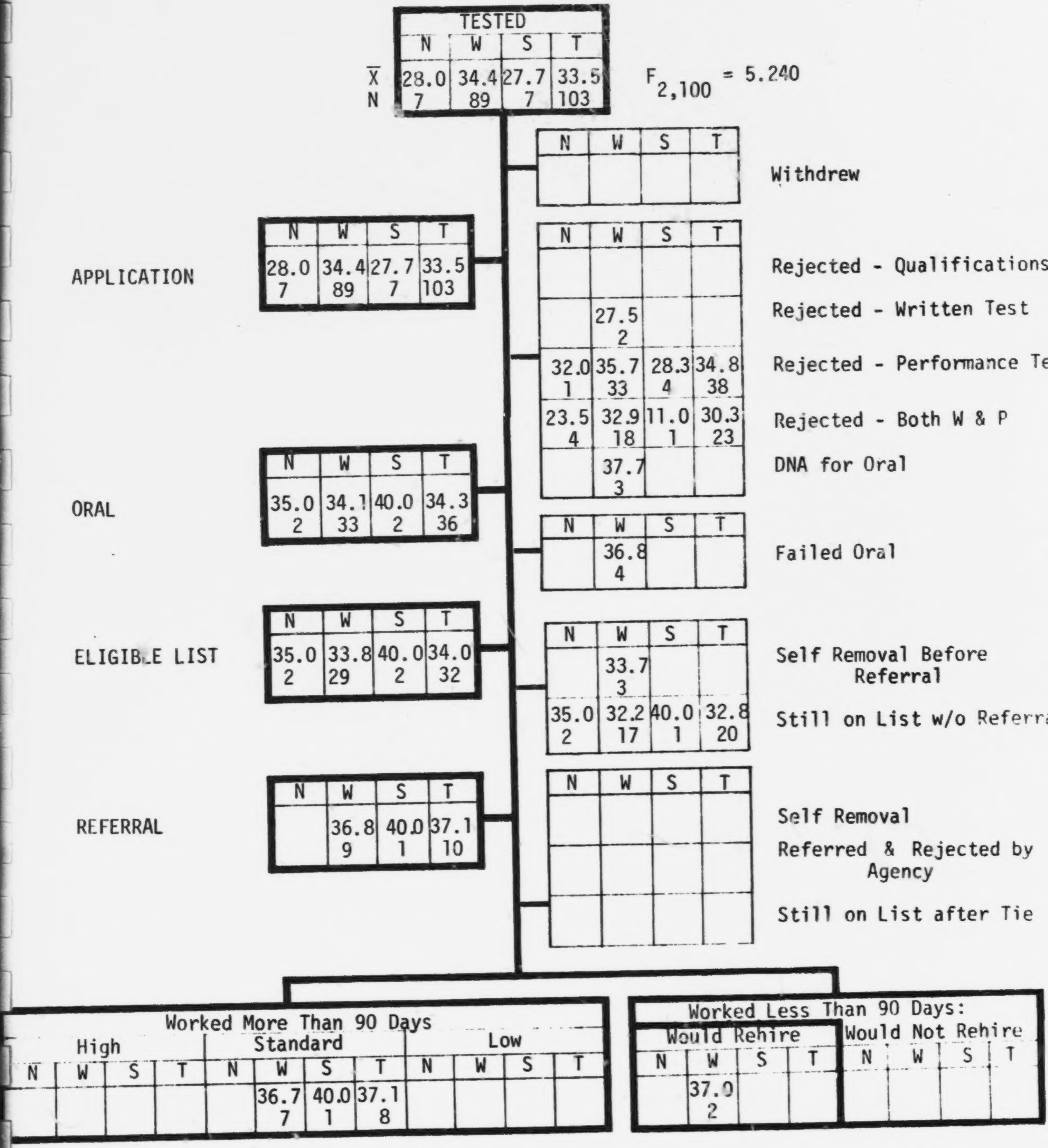
REFERRAL	N	W	S	T
		365 6		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					347 4						

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	400 2						

Graph 62. Book A and B Weighted Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
$\overline{X}$	28.0	34.4	27.7	33.5
N	7	89	7	103

$F_{2,100} = 5.240$

	N	W	S	T
Withdrew				

APPLICATION

N	W	S	T
28.0 7	34.4 89	27.7 7	33.5 103

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		27.5 2		
Rejected - Performance Test	32.0 1	35.7 33	28.3 4	34.8 38
Rejected - Both W & P	23.5 4	32.9 18	11.0 1	30.3 23
DNA for Oral		37.7 3		

ORAL

N	W	S	T
35.0 2	34.1 33	40.0 2	34.3 36

	N	W	S	T
Failed Oral		36.8 4		

ELIGIBLE LIST

N	W	S	T
35.0 2	33.8 29	40.0 2	34.0 32

	N	W	S	T
Self Removal Before Referral		33.7 3		
Still on List w/o Referral	35.0 2	32.2 17	40.0 1	32.8 20

REFERRAL

N	W	S	T
	36.8 9	40.0 1	37.1 10

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days

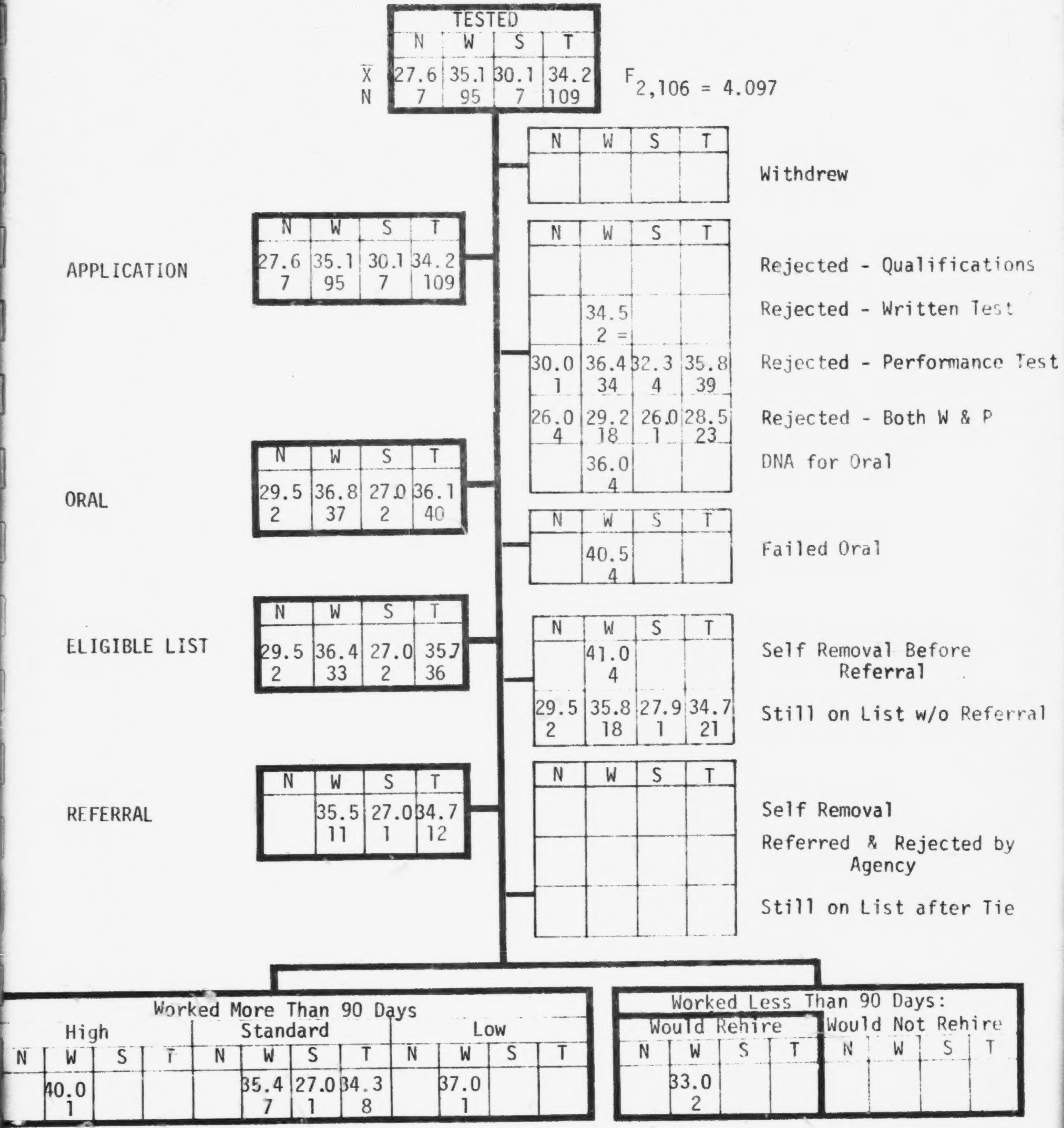
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
					36.7 7	40.0 1	37.1 8				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	37.0 2						

Graph 63. Book II-A Score by Selection Stage and Ethnic Group - Group Two

3



TESTED

	N	W	S	T
X̄	27.6	35.1	30.1	34.2
N	7	95	7	109

$F_{2,106} = 4.097$

	N	W	S	T
Withdrew				

APPLICATION

N	W	S	T
27.6 7	35.1 95	30.1 7	34.2 109

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		34.5 2 =		
Rejected - Performance Test	30.0 1	36.4 34	32.3 4	35.8 39
Rejected - Both W & P	26.0 4	29.2 18	26.0 1	28.5 23
DNA for Oral		36.0 4		

ORAL

N	W	S	T
29.5 2	36.8 37	27.0 2	36.1 40

	N	W	S	T
Failed Oral		40.5 4		

ELIGIBLE LIST

N	W	S	T
29.5 2	36.4 33	27.0 2	35.7 36

	N	W	S	T
Self Removal Before Referral		41.0 4		
Still on List w/o Referral	29.5 2	35.8 18	27.9 1	34.7 21

REFERRAL

N	W	S	T
	35.5 11	27.0 1	34.7 12

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

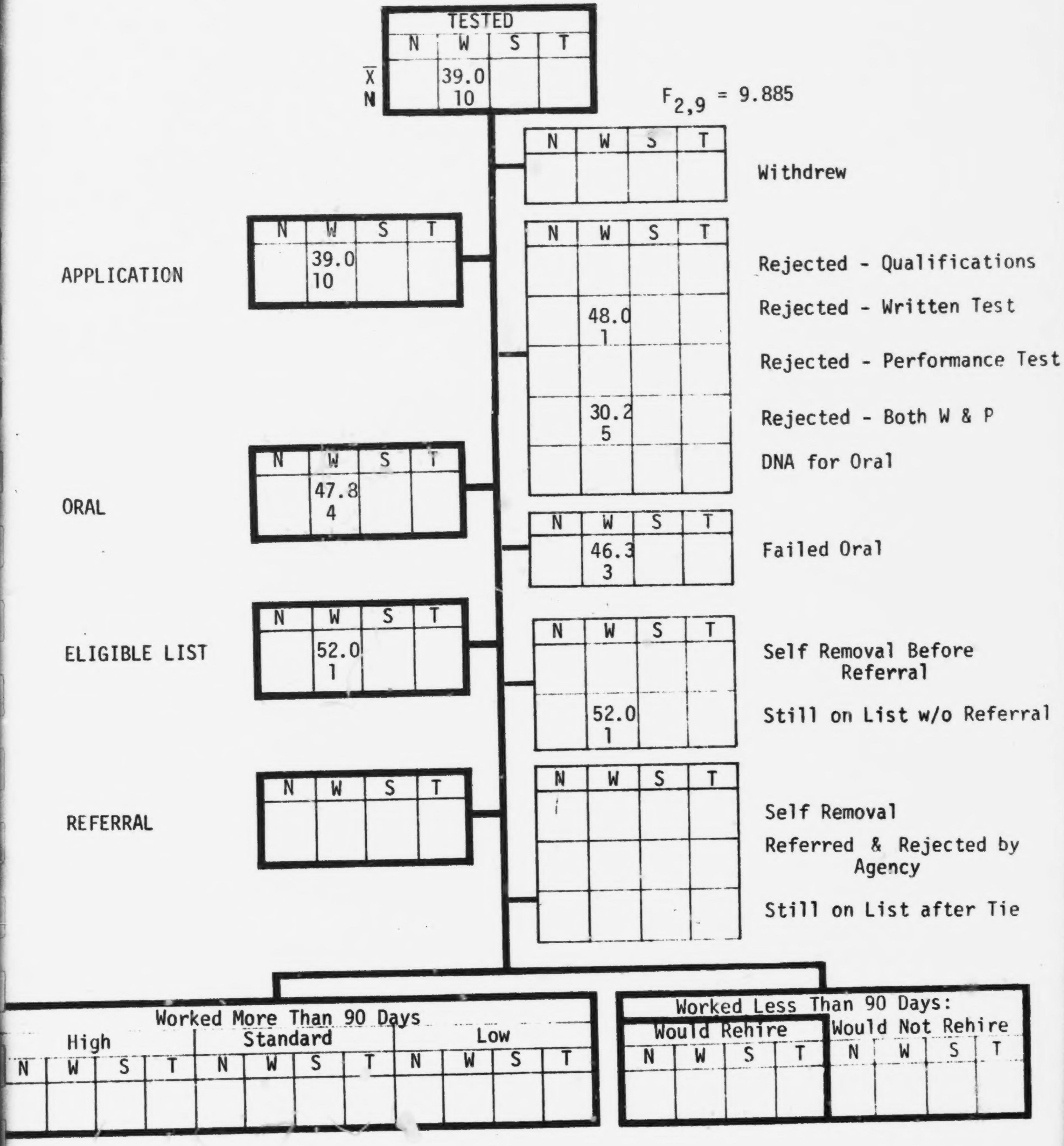
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	40.0 1				35.4 7	27.0 1	34.3 8		37.0 1		

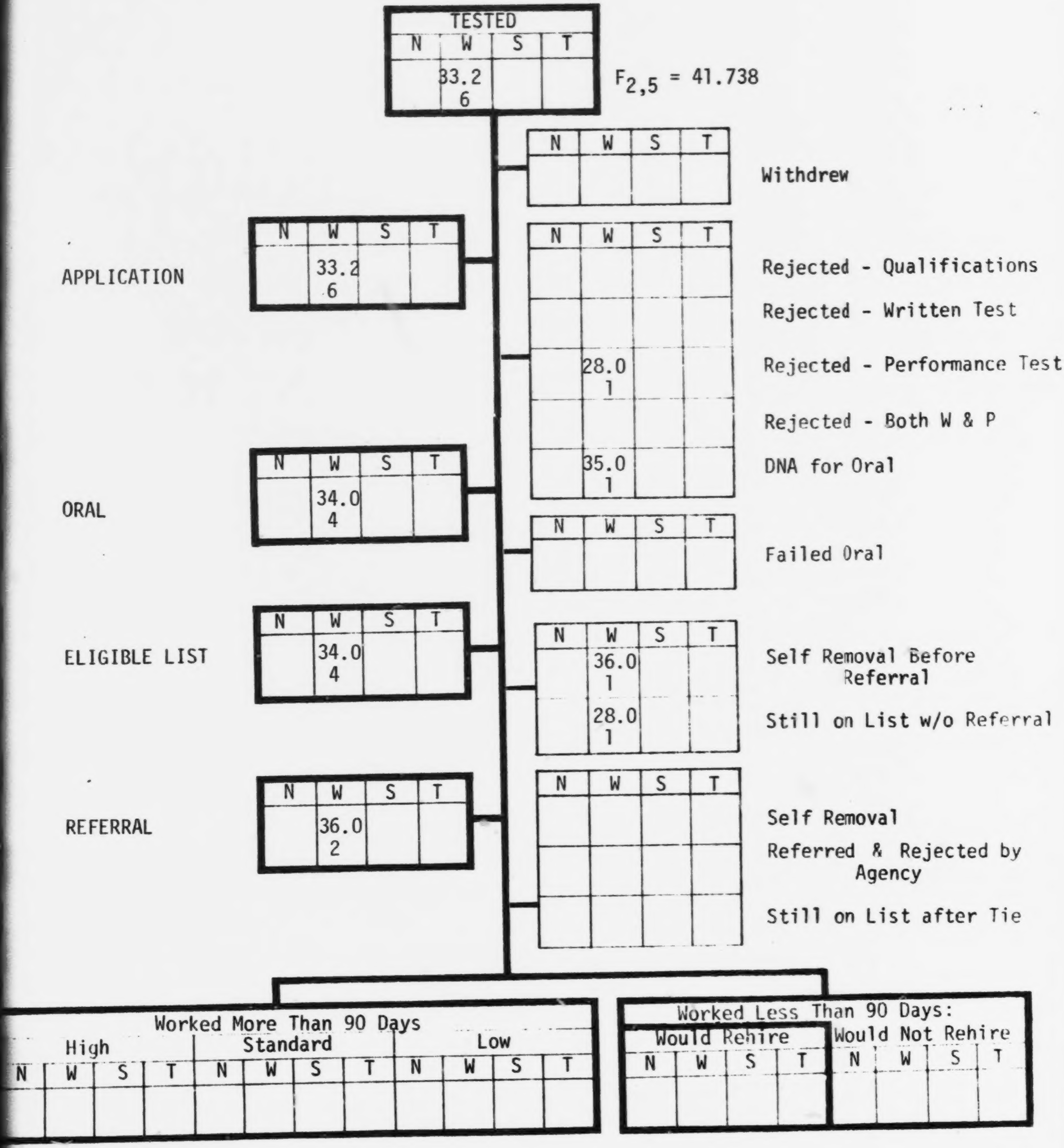
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	33.0 2						

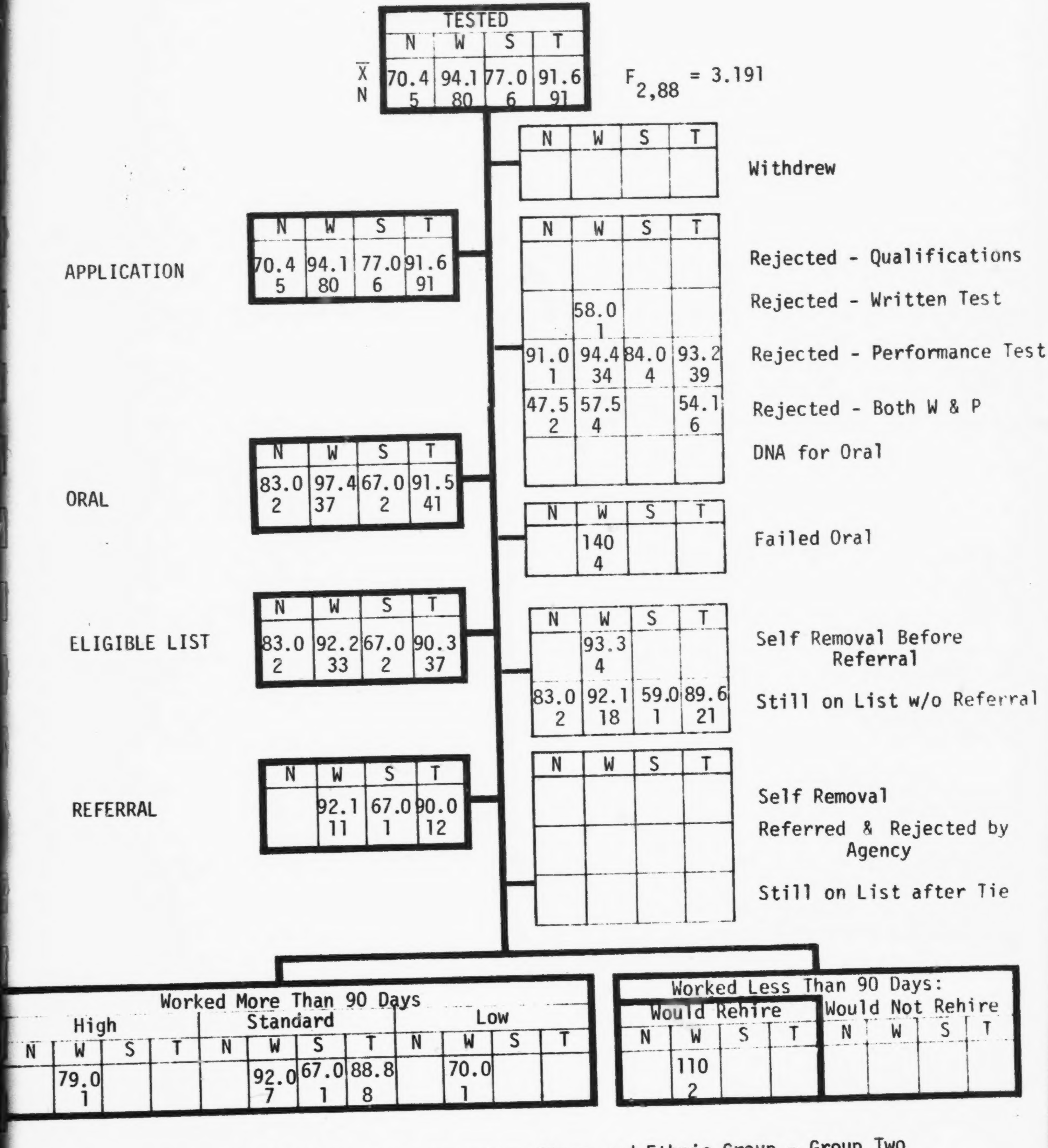
Graph 64. Book II-B Score by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
X̄ 39.0
N 10
$F_{2,9}$ = 9.885
Withdrew
APPLICATION
39.0
10
Rejected - Qualifications
Rejected - Written Test
48.0
1
Rejected - Performance Test
Rejected - Both W & P
30.2
5
DNA for Oral
ORAL
47.8
4
Failed Oral
46.3
3
ELIGIBLE LIST
52.0
1
Self Removal Before Referral
Still on List w/o Referral
52.0
1
REFERRAL
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire

Graph 65. Book II-C Score by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
33.2
6
$F_{2,5}$ = 41.738
N W S T
Withdrew
APPLICATION
N W S T
33.2
6
N W S T
Rejected - Qualifications
Rejected - Written Test
28.0
1
Rejected - Performance Test
Rejected - Both W & P
35.0
1
DNA for Oral
ORAL
N W S T
34.0
4
N W S T
Failed Oral
ELIGIBLE LIST
N W S T
34.0
4
N W S T
36.0
1
Self Removal Before Referral
28.0
1
Still on List w/o Referral
REFERRAL
N W S T
36.0
2
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
N W S T N W S T N W S T
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
N W S T N W S T

Graph 66. Book II-E Score by Selection Stage and Ethnic Group - Group Two



$F_{2,88} = 3.191$

TESTED	N	W	S	T
$\overline{X}$	70.4	94.1	77.0	91.6
N	5	80	6	91

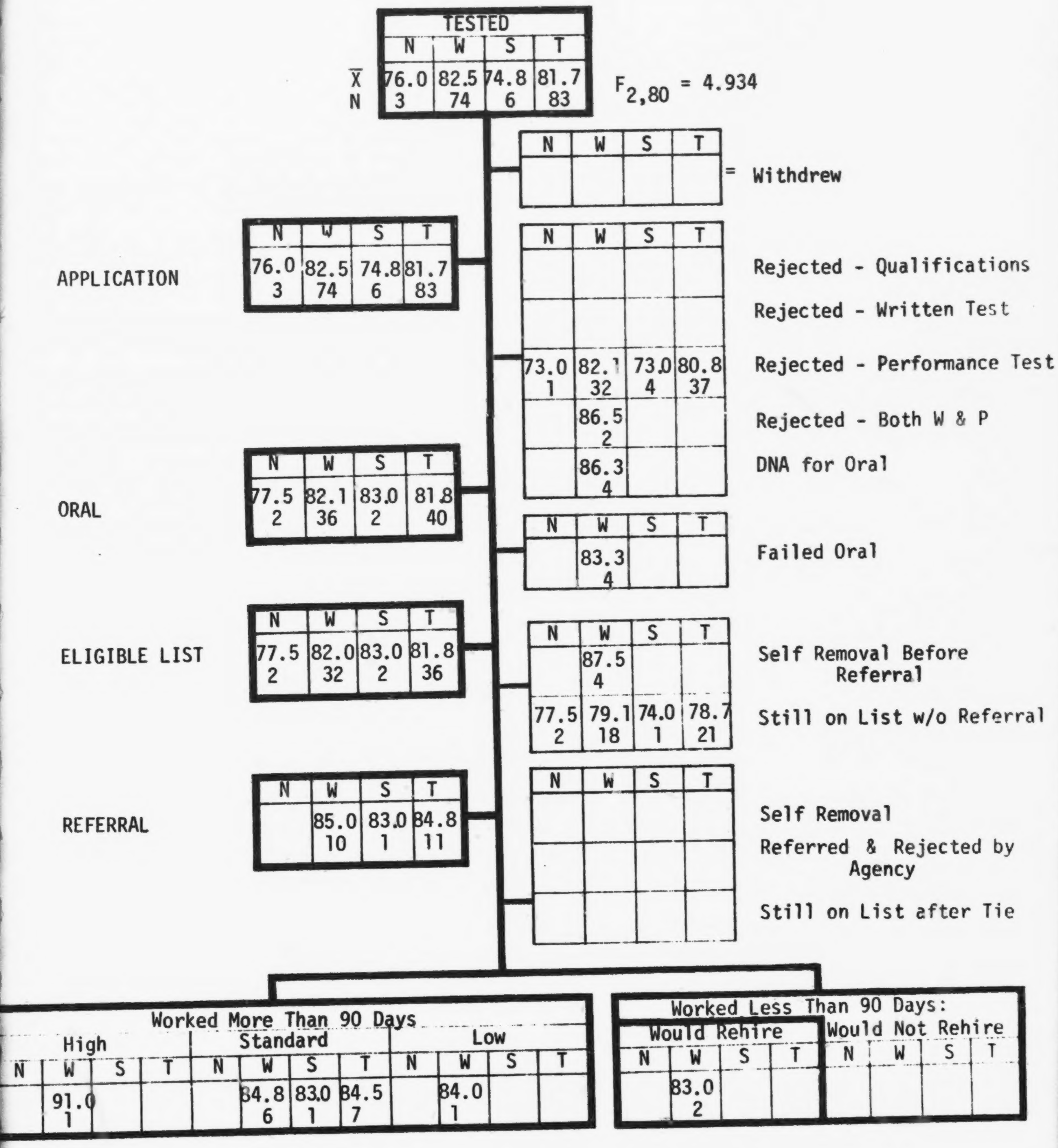
Stage	N	W	S	T
APPLICATION	70.4 5	94.1 80	77.0 6	91.6 91
ORAL	83.0 2	97.4 37	67.0 2	91.5 41
ELIGIBLE LIST	83.0 2	92.2 33	67.0 2	90.3 37
REFERRAL		92.1 11	67.0 1	90.0 12

	N	W	S	T
Withdrew				
Rejected - Qualifications				
Rejected - Written Test		58.0 1		
Rejected - Performance Test	91.0 1	94.4 34	84.0 4	93.2 39
Rejected - Both W & P	47.5 2	57.5 4		54.1 6
DNA for Oral				
Failed Oral		140 4		
Self Removal Before Referral		93.3 4		
Still on List w/o Referral	83.0 2	92.1 18	59.0 1	89.6 21
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

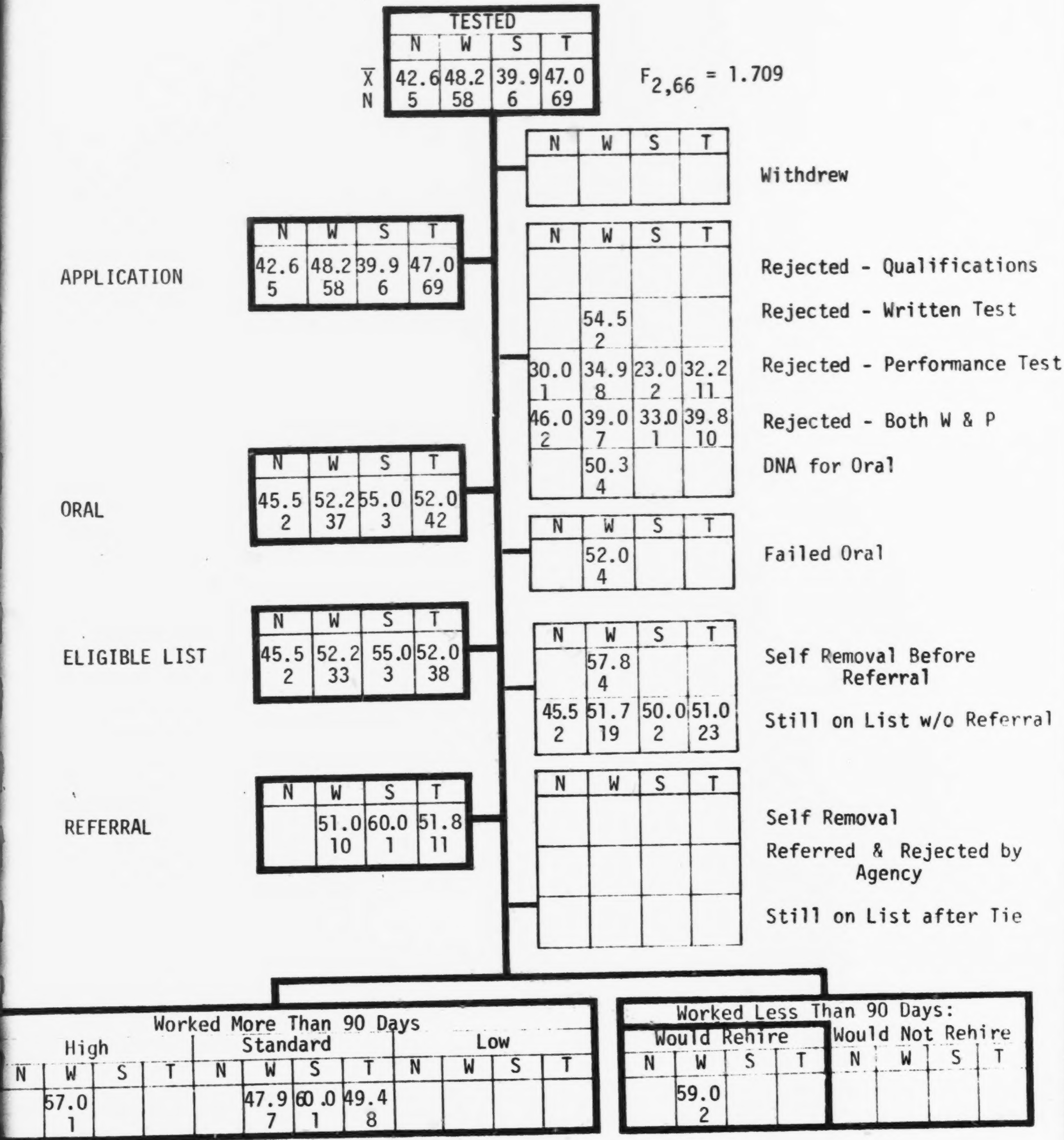
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	79.0 1				92.0 7	67.0 1	88.8 8		70.0 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	110 2						

Graph 67. Total Raw Score by Selection Stage and Ethnic Group - Group Two


TESTED
N W S T
X̄ 76.0 82.5 74.8 81.7
N 3 74 6 83
$F_{2,80} = 4.934$
N W S T
= Withdrew
APPLICATION
N W S T
76.0 82.5 74.8 81.7
3 74 6 83
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
73.0 82.1 73.0 80.8
1 32 4 37
Rejected - Both W & P
86.5
2
DNA for Oral
86.3
4
ORAL
N W S T
77.5 82.1 83.0 81.8
2 36 2 40
N W S T
Failed Oral
83.3
4
ELIGIBLE LIST
N W S T
77.5 82.0 83.0 81.8
2 32 2 36
N W S T
Self Removal Before Referral
87.5
4
Still on List w/o Referral
77.5 79.1 74.0 78.7
2 18 1 21
REFERRAL
N W S T
85.0 83.0 84.8
10 1 11
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
N W S T N W S T N W S T
91.0
1
84.8 83.0 84.5
6 1 7
84.0
1
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
N W S T N W S T
83.0
2

Graph 68. Converted Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
X̄	42.6	48.2	39.9	47.0
N	5	58	6	69

$F_{2,66} = 1.709$

	N	W	S	T
Withdrew				

APPLICATION	N	W	S	T
	42.6 5	48.2 58	39.9 6	47.0 69

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		54.5 2		
Rejected - Performance Test	30.0 1	34.9 8	23.0 2	32.2 11
Rejected - Both W & P	46.0 2	39.0 7	33.0 1	39.8 10
DNA for Oral		50.3 4		

ORAL	N	W	S	T
	45.5 2	52.2 37	55.0 3	52.0 42

	N	W	S	T
Failed Oral		52.0 4		

ELIGIBLE LIST	N	W	S	T
	45.5 2	52.2 33	55.0 3	52.0 38

	N	W	S	T
Self Removal Before Referral		57.8 4		
Still on List w/o Referral	45.5 2	51.7 19	50.0 2	51.0 23

REFERRAL	N	W	S	T
		51.0 10	60.0 1	51.8 11

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

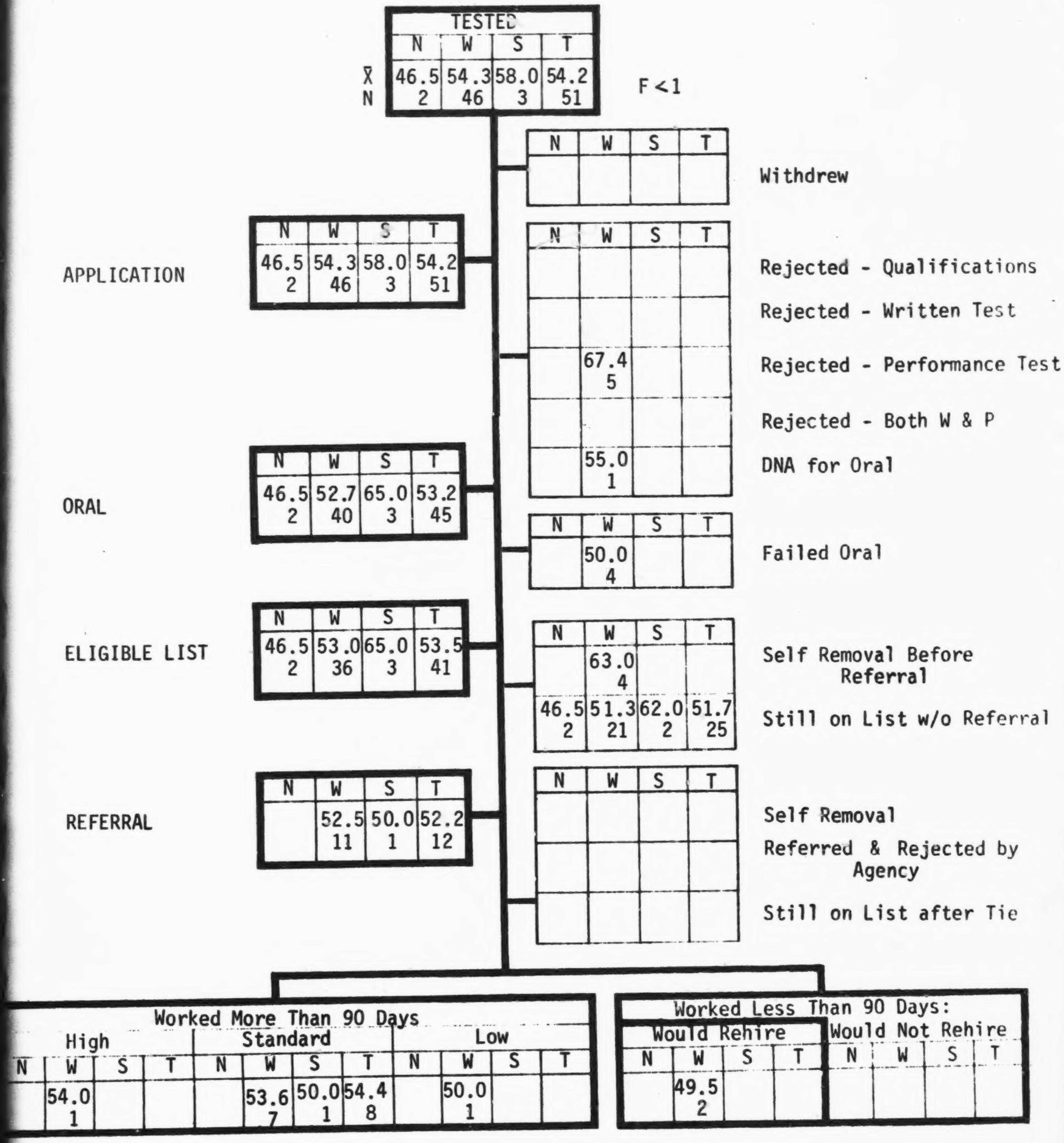
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	57.0 1				47.9 7	60.0 1	49.4 8				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	59.0 2						

Graph 69. Typing Score by Selection Stage and Ethnic Group - Group Two



TESTED	N	W	S	T
X̄	46.5	54.3	58.0	54.2
N	2	46	3	51

F <1

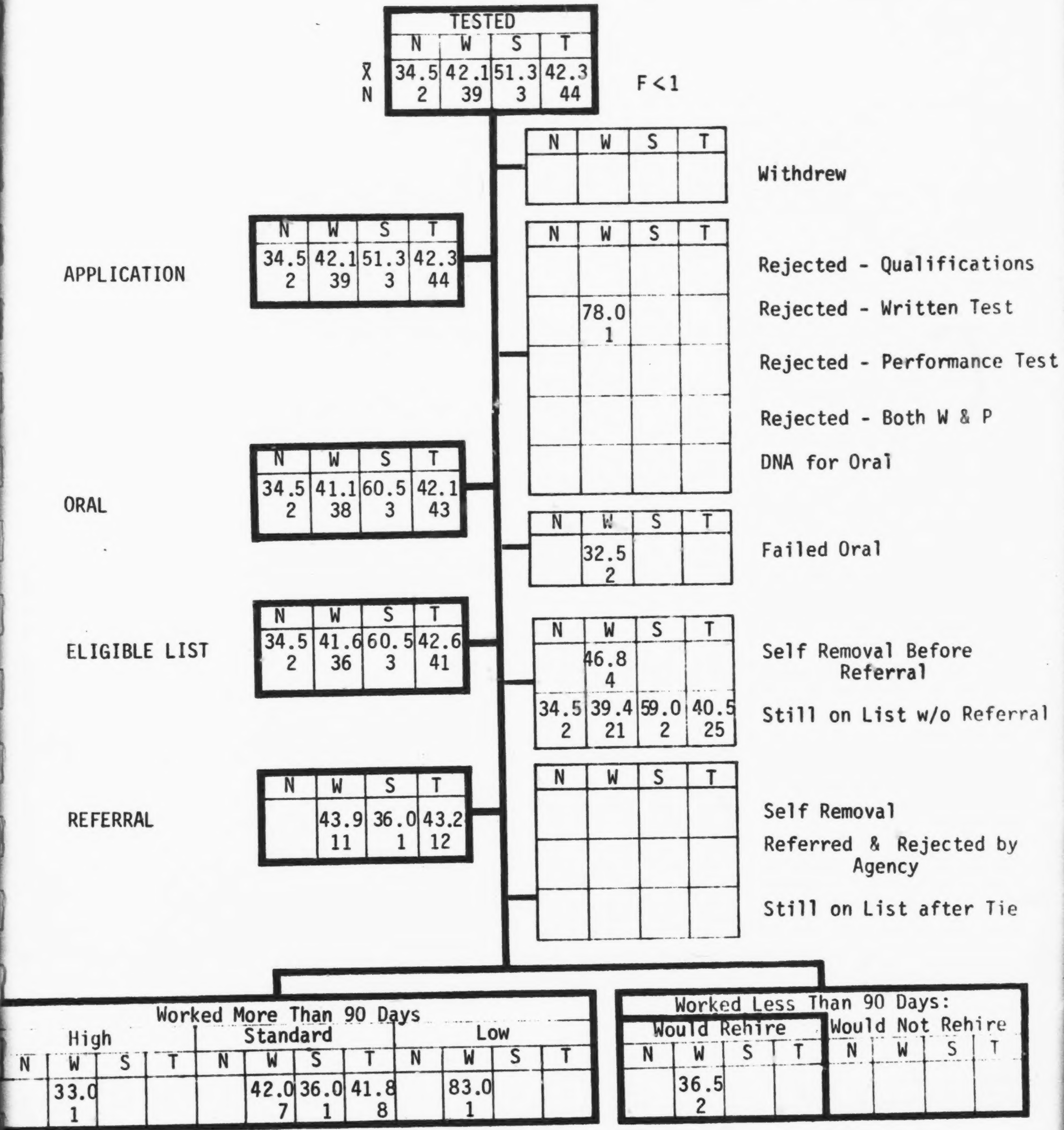
	N	W	S	T
APPLICATION	46.5 2	54.3 46	58.0 3	54.2 51
ORAL	46.5 2	52.7 40	65.0 3	53.2 45
ELIGIBLE LIST	46.5 2	53.0 36	65.0 3	53.5 41
REFERRAL		52.5 11	50.0 1	52.2 12

	N	W	S	T
Withdrew				
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		67.4 5		
Rejected - Both W & P				
DNA for Oral		55.0 1		
Failed Oral		50.0 4		
Self Removal Before Referral		63.0 4		
Still on List w/o Referral	46.5 2	51.3 21	62.0 2	51.7 25
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	54.0 1				53.6 7	50.0 1	54.4 8		50.0 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	49.5 2						

Graph 70. Written Score by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
X̄	34.5	42.1	51.3	42.3
N	2	39	3	44

F<1

Withdrew

N	W	S	T

APPLICATION

N	W	S	T
34.5 2	42.1 39	51.3 3	42.3 44

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		78.0 1		
Rejected - Performance Test				
Rejected - Both W & P				
DNA for Oral				

ORAL

N	W	S	T
34.5 2	41.1 38	60.5 3	42.1 43

	N	W	S	T
Failed Oral		32.5 2		

ELIGIBLE LIST

N	W	S	T
34.5 2	41.6 36	60.5 3	42.6 41

	N	W	S	T
Self Removal Before Referral		46.8 4		
Still on List w/o Referral	34.5 2	39.4 21	59.0 2	40.5 25

REFERRAL

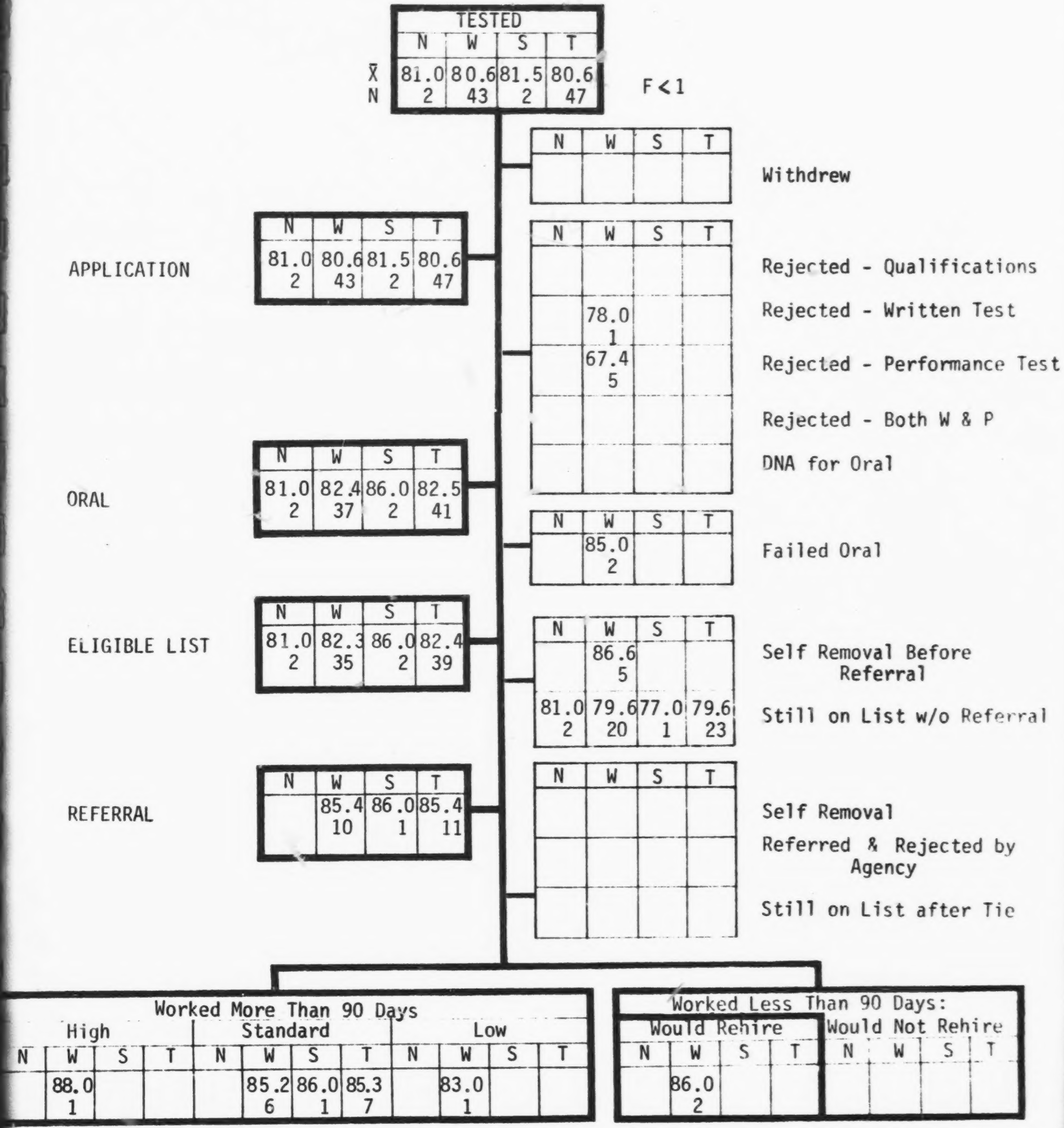
N	W	S	T
	43.9 11	36.0 1	43.2 12

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	33.0 1				42.0 7	36.0 1	41.8 8		83.0 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	36.5 2						

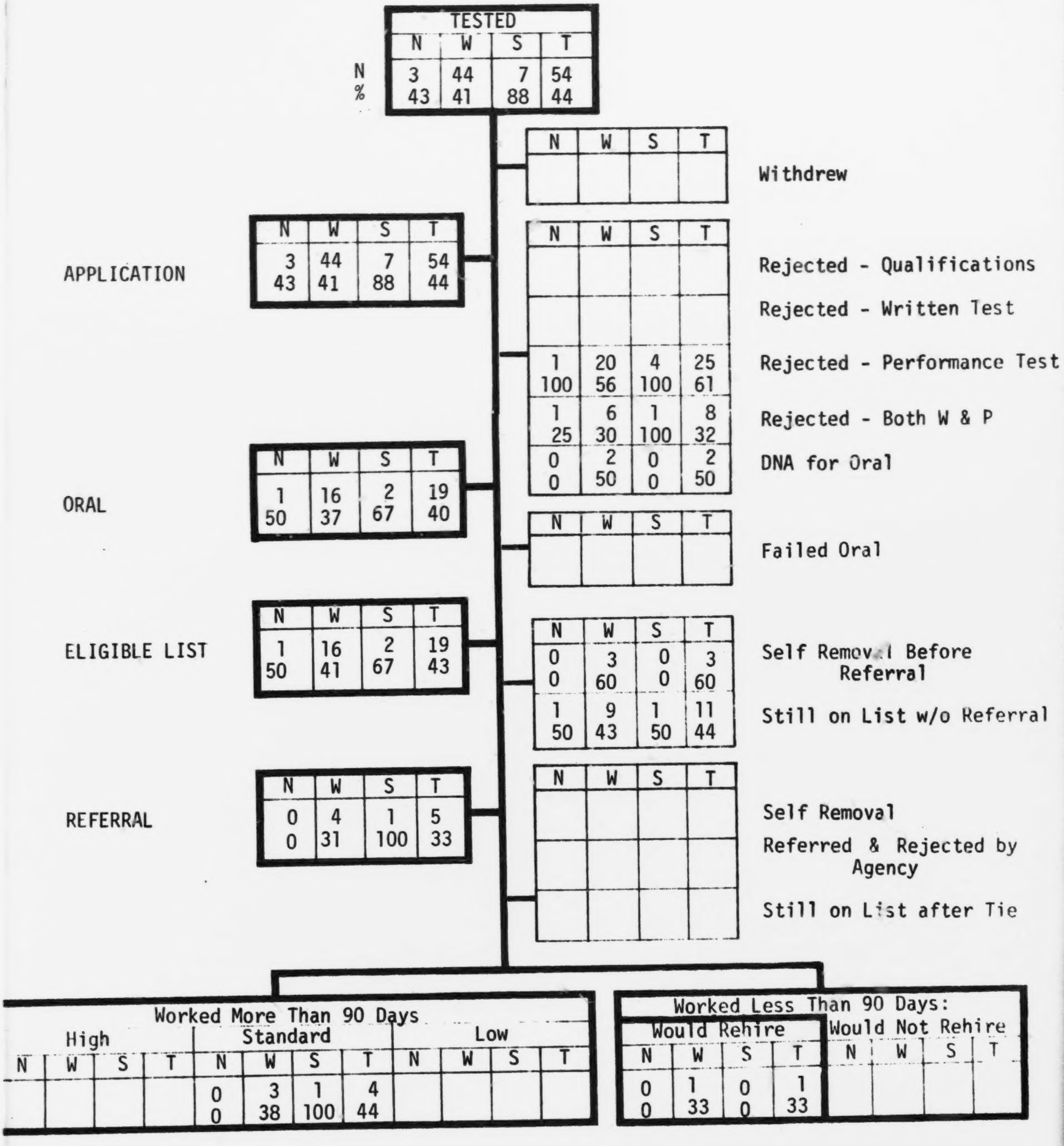
Graph 71. Oral Rating by Selection Stage and Ethnic Group - Group Two



F<1

Stage	N	W	S	T
TESTED ($\bar{X}$ / N)	81.0 2	80.6 43	81.5 2	80.6 47
Withdrew				
APPLICATION	81.0 2	80.6 43	81.5 2	80.6 47
Rejected - Qualifications				
Rejected - Written Test		78.0 1		
Rejected - Performance Test		67.4 5		
Rejected - Both W & P				
DNA for Oral				
ORAL	81.0 2	82.4 37	86.0 2	82.5 41
Failed Oral		85.0 2		
ELIGIBLE LIST	81.0 2	82.3 35	86.0 2	82.4 39
Self Removal Before Referral		86.6 5		
Still on List w/o Referral	81.0 2	79.6 20	77.0 1	79.6 23
REFERRAL		85.4 10	86.0 1	85.4 11
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				
Worked More Than 90 Days: High		88.0 1		
Worked More Than 90 Days: Standard		85.2 6	86.0 1	85.3 7
Worked More Than 90 Days: Low		83.0 1		
Worked Less Than 90 Days: Would Rehire		86.0 2		
Worked Less Than 90 Days: Would Not Rehire				

Graph 72. Total Rounded Score by Selection Stage and Ethnic Group - Group Two

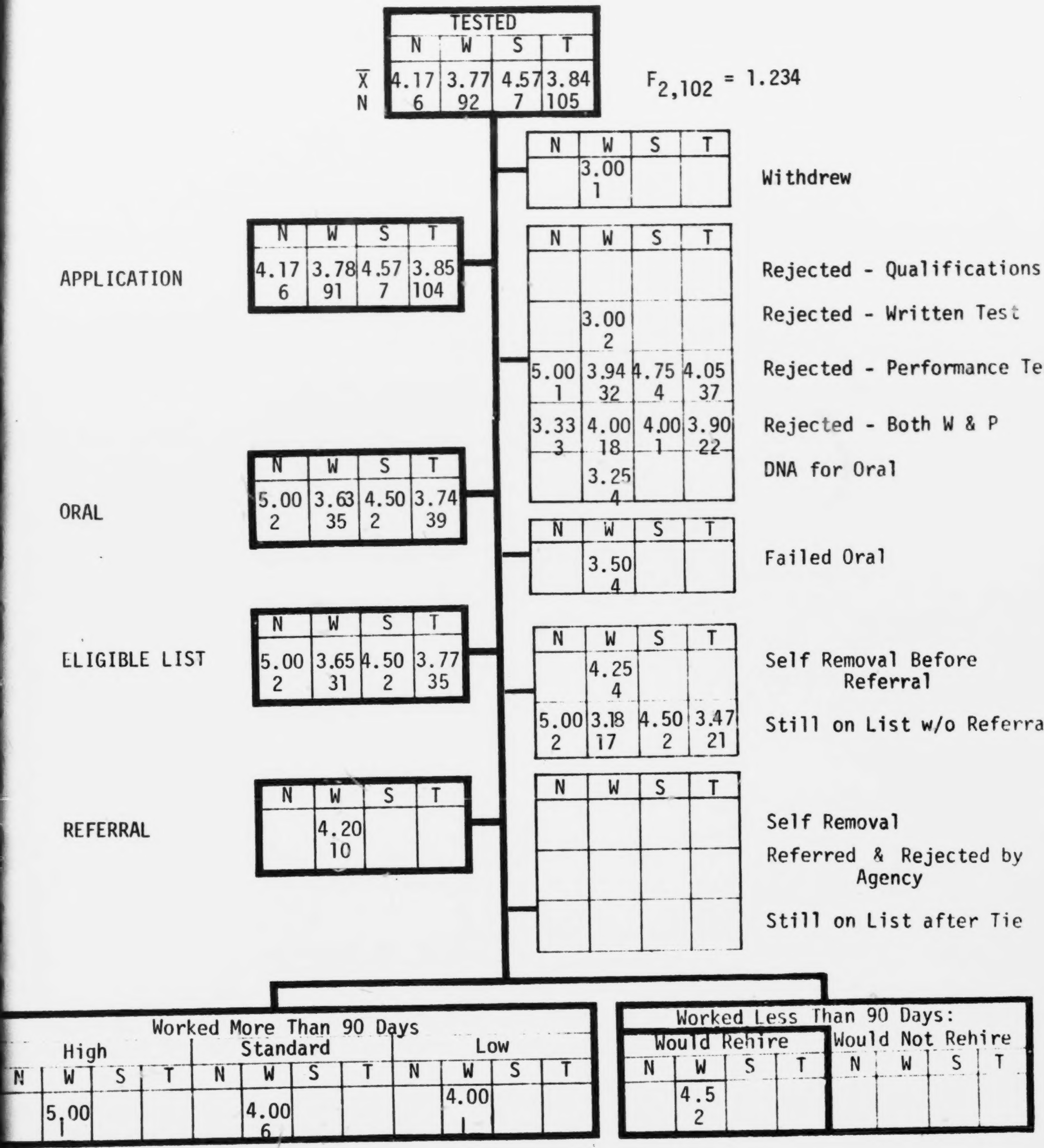


		N	W	S	T
TESTED	N	3	44	7	54
	%	43	41	88	44
Withdrew					
APPLICATION		3 43	44 41	7 88	54 44
Rejected - Qualifications					
Rejected - Written Test					
Rejected - Performance Test		1 100	20 56	4 100	25 61
Rejected - Both W & P		1 25	6 30	1 100	8 32
DNA for Oral		0 0	2 50	0 0	2 50
ORAL		1 50	16 37	2 67	19 40
Failed Oral					
ELIGIBLE LIST		1 50	16 41	2 67	19 43
Self Removal Before Referral		0 0	3 60	0 0	3 60
Still on List w/o Referral		1 50	9 43	1 50	11 44
REFERRAL		0 0	4 31	1 100	5 33
Self Removal					
Referred & Rejected by Agency					
Still on List after Tie					

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
				0 0	3 38	1 100	4 44				

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0 0	1 33	0 0	1 33				

Graph 73. Marital Status (Yes) by Selection Stage and Ethnic Group - Group Two



TESTED	N	W	S	T
$\overline{X}$	4.17	3.77	4.57	3.84
N	6	92	7	105

$F_{2,102} = 1.234$

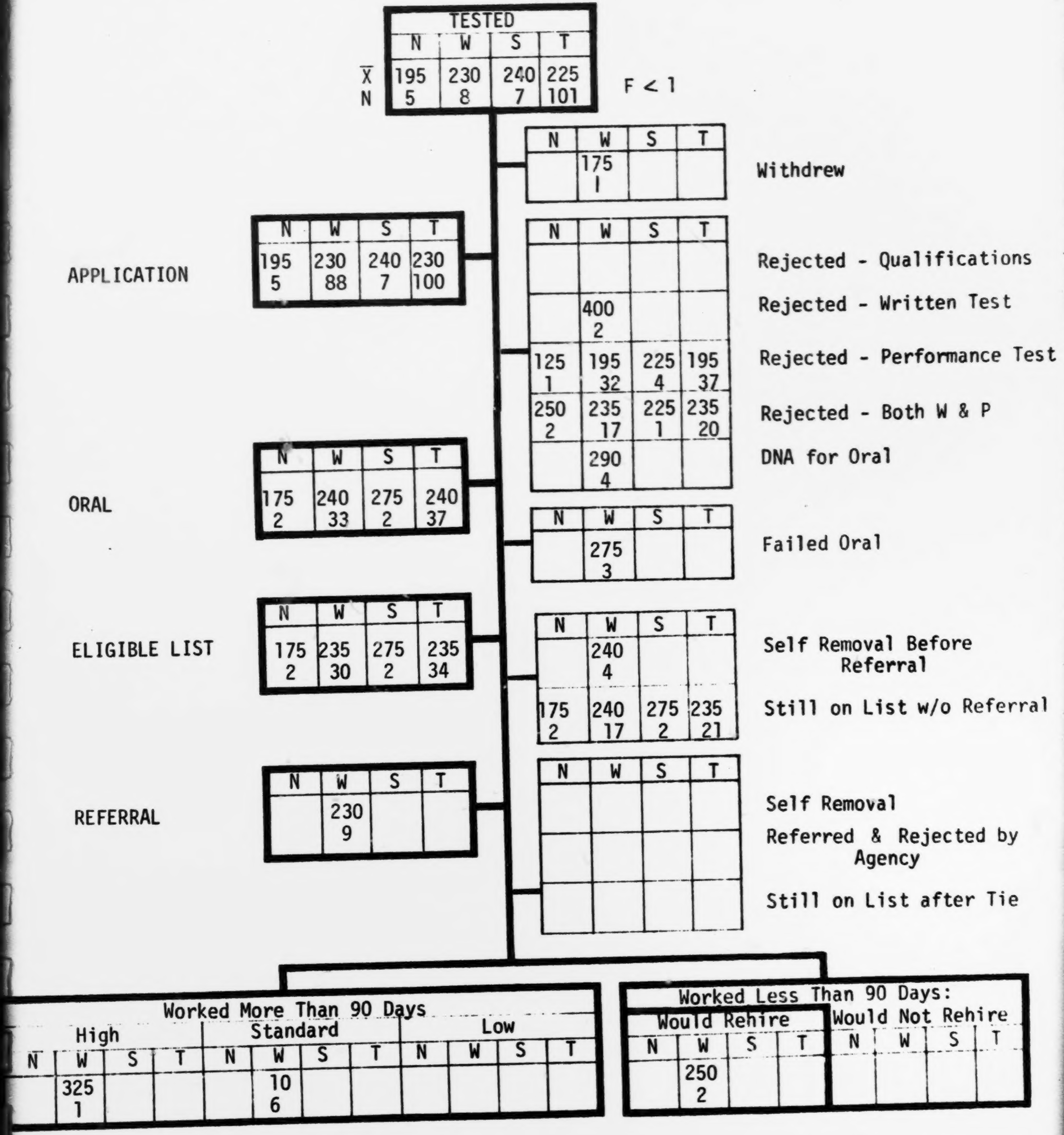
	N	W	S	T
APPLICATION	4.17 6	3.78 91	4.57 7	3.85 104
ORAL	5.00 2	3.63 35	4.50 2	3.74 39
ELIGIBLE LIST	5.00 2	3.65 31	4.50 2	3.77 35
REFERRAL		4.20 10		

	N	W	S	T
Withdrew		3.00 1		
Rejected - Qualifications				
Rejected - Written Test		3.00 2		
Rejected - Performance Test	5.00 1	3.94 32	4.75 4	4.05 37
Rejected - Both W & P	3.33 3	4.00 18	4.00 1	3.90 22
DNA for Oral		3.25 4		
Failed Oral		3.50 4		
Self Removal Before Referral		4.25 4		
Still on List w/o Referral	5.00 2	3.18 17	4.50 2	3.47 21
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	5.00 1				4.00 6				4.00 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	4.5 2						

Graph 74. Length of Last Employment by Selection Stage and Ethnic Group - Group Two



TESTED	N	W	S	T
X̄	195	230	240	225
N	5	8	7	101

F < 1

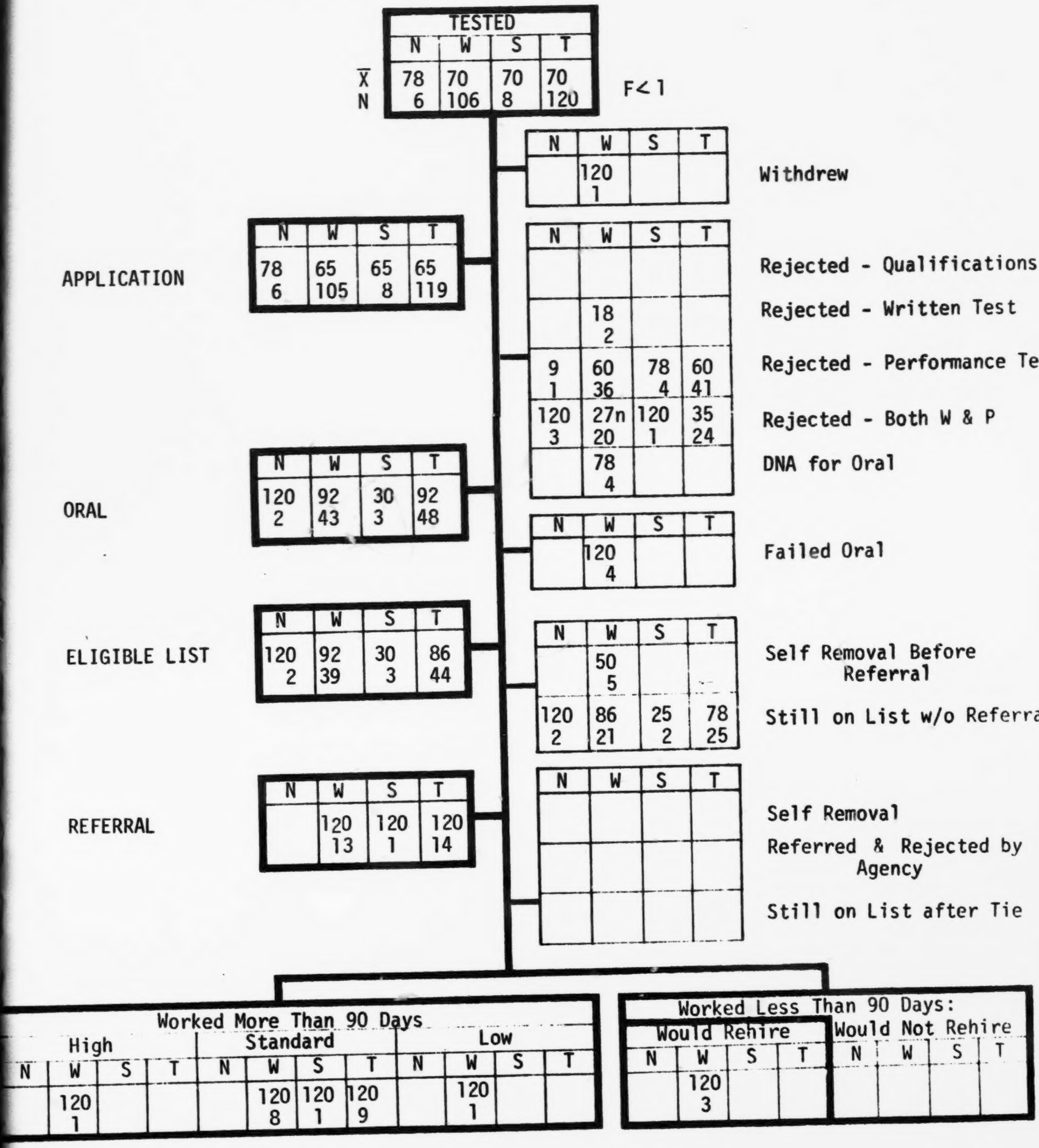
Stage		N	W	S	T
APPLICATION	X̄	195	230	240	230
	N	5	88	7	100
ORAL	X̄	175	240	275	240
	N	2	33	2	37
ELIGIBLE LIST	X̄	175	235	275	235
	N	2	30	2	34
REFERRAL	X̄		230		
	N		9		

Outcome		N	W	S	T
Withdrew	X̄		175		
	N		1		
Rejected - Qualifications	X̄				
	N				
Rejected - Written Test	X̄		400		
	N		2		
Rejected - Performance Test	X̄	125	195	225	195
	N	1	32	4	37
Rejected - Both W & P	X̄	250	235	225	235
	N	2	17	1	20
DNA for Oral	X̄		290		
	N		4		
Failed Oral	X̄		275		
	N		3		
Self Removal Before Referral	X̄		240		
	N		4		
Still on List w/o Referral	X̄	175	240	275	235
	N	2	17	2	21
Self Removal	X̄				
	N				
Referred & Rejected by Agency	X̄				
	N				
Still on List after Tie	X̄				
	N				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	325				10						
	1				6						

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	250						
	2						

Graph 75. Salary at Last Employment by Selection Stage and Ethnic Group - Group Two



TESTED

	N	W	S	T
X̄ N	78 6	70 106	70 8	70 120

F< 1

	N	W	S	T
Withdrew		120 1		

APPLICATION

N	W	S	T
78 6	65 105	65 8	65 119

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		18 2		
Rejected - Performance Test	9 1	60 36	78 4	60 41
Rejected - Both W & P	120 3	27n 20	120 1	35 24
DNA for Oral		78 4		

ORAL

N	W	S	T
120 2	92 43	30 3	92 48

	N	W	S	T
Failed Oral		120 4		

ELIGIBLE LIST

N	W	S	T
120 2	92 39	30 3	86 44

	N	W	S	T
Self Removal Before Referral		50 5		
Still on List w/o Referral	120 2	86 21	25 2	78 25

REFERRAL

N	W	S	T
	120 13	120 1	120 14

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	120 1				120 8	120 1	120 9		120 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	120 3						

Graph 76. Length of Residence in Colorado by Selection Stage and Ethnic Group - Group Two

From inspection of Graphs 51 through 76 it can be noted that the Whites were significantly older than the other groups. The Negroes in Group Two were slightly better educated, but the Whites tended to score higher consistently on tests other than on the written test, where the Spanish-surname personnel scored highest. The Spanish-surname personnel were also given the highest oral interview ratings, which was also reflected in the highest ranking for this group in terms of Total Rounded Score. As in Group One personnel, a higher percentage of Spanish-surname applicants was married, the Whites had held their previous job longer and had lived in Colorado longer. For those for whom salary data were available, the Spanish-surname personnel had received highest pay in their last job.

Selection Stage by Ethnic Group - Group Three

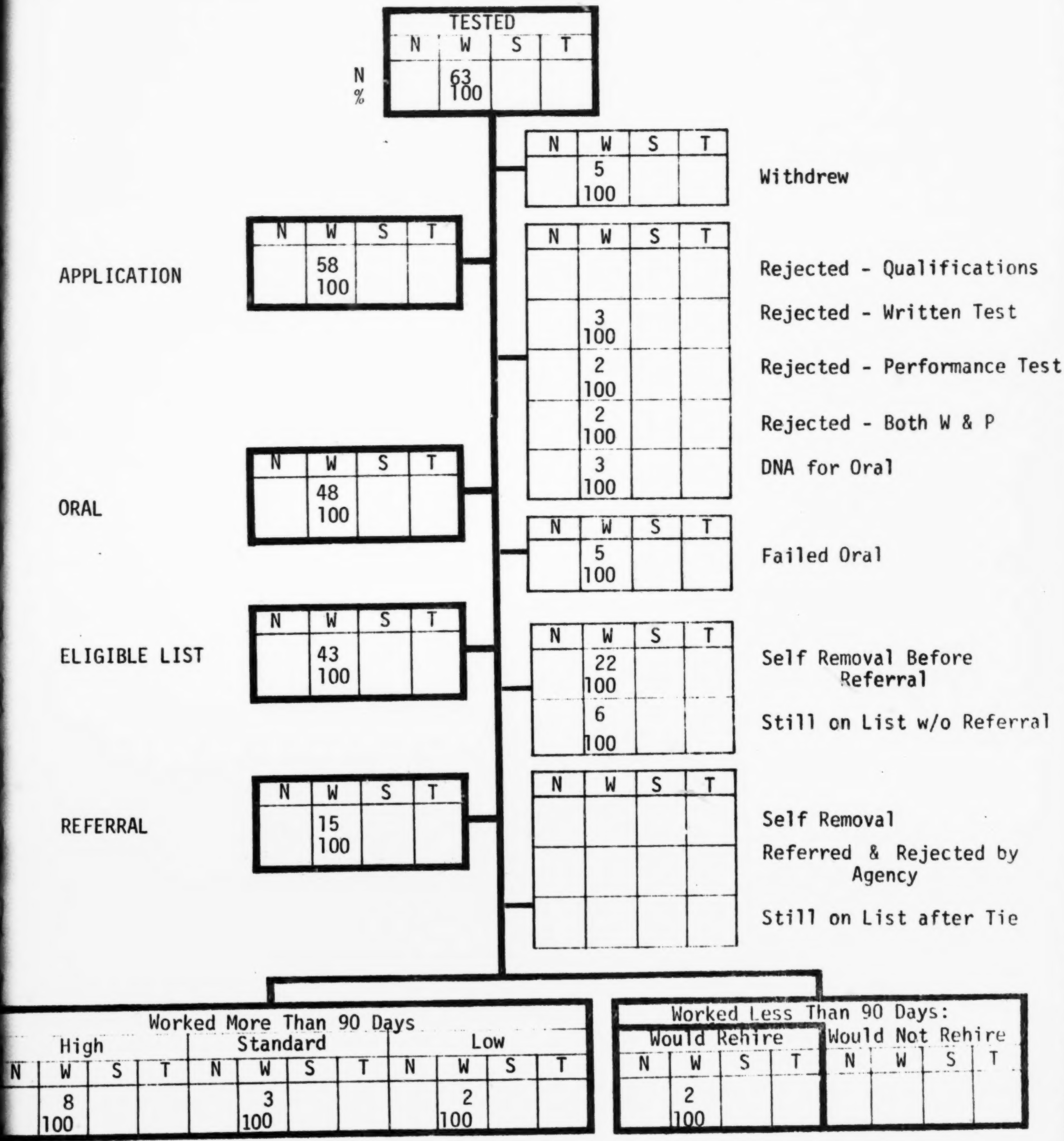
In Graphs 77 through 97 are shown the characteristics of the applicants comprising Job Group Three--Clerk Stenographer, Intermediate Clerk Stenographer and Senior Clerk Stenographer. In this job group there were no minority group personnel, consequently only entries for Whites appear in the graphs.

The availability of other positions for persons with high level skills is reflected in the relatively high proportion of applicants who voluntarily removed themselves after having been placed on the eligible list (Graph 77). This proportion is considerably higher than for the other groups.

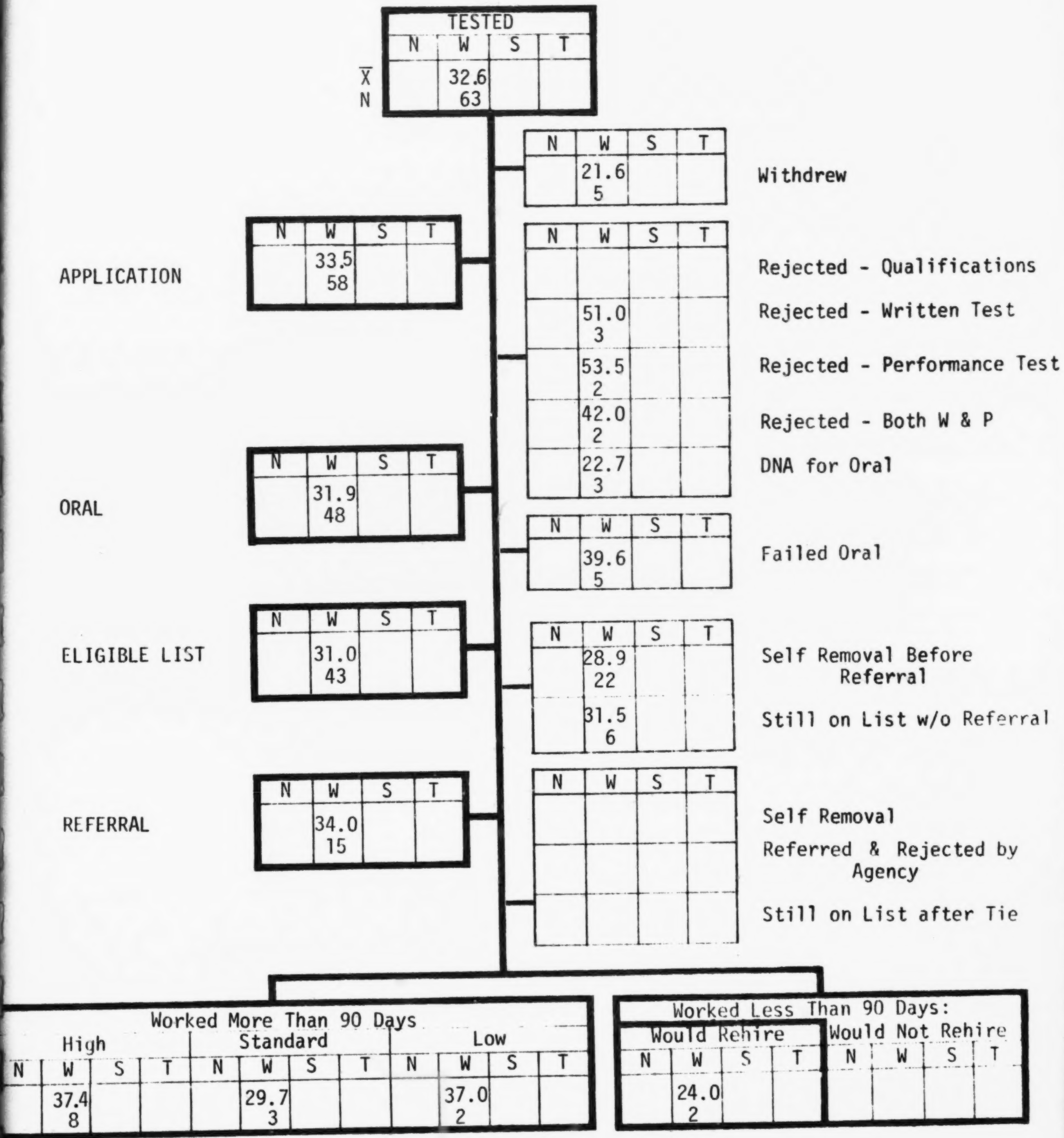
Differences in age by selection stage are apparent from Graph 78. In general, those who were eliminated from further consideration because of written and performance test scores tended to be older than those given further consideration.

Some evidence of the validity of Books I-A and B and II-A and B is apparent from the generally increasingly high mean scores of referred applicants as the complexity of the three job groups increased. These scores were as follows:

		Negro	White	Spanish-Surname	Total
Group One	Book IA	59.0(1)	66.6(12)	73.5(2)	67.0(15)
	Book IB	59.0(1)	41.5(12)	50.5(2)	43.2(15)
	Book IIA	33.0(1)	37.1(24)	32.8(4)	36.3(29)
	Book IIB	32.0(1)	36.5(24)	34.0(4)	36.0(20)
Group Two	Book IA		71.5(6)		
	Book IB		50.2(6)		
	Book IIA		36.8(9)	40.0(1)	37.1(10)
	Book IIB		35.5(11)	27.0(1)	34.7(12)


TESTED
N W S T
N
%
63
100
N W S T
5
100
Withdrew
APPLICATION
N W S T
58
100
N W S T
Rejected - Qualifications
Rejected - Written Test
3
100
Rejected - Performance Test
2
100
Rejected - Both W & P
2
100
DNA for Oral
3
100
ORAL
N W S T
48
100
N W S T
5
100
Failed Oral
ELIGIBLE LIST
N W S T
43
100
N W S T
22
100
Self Removal Before Referral
6
100
Still on List w/o Referral
REFERRAL
N W S T
15
100
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
8
100
Standard
N W S T
3
100
Low
N W S T
2
100
Worked Less Than 90 Days:
Would Rehire
N W S T
2
100
Would Not Rehire
N W S T

Graph 77. Attrition Survival by Selection Stage - Group Three



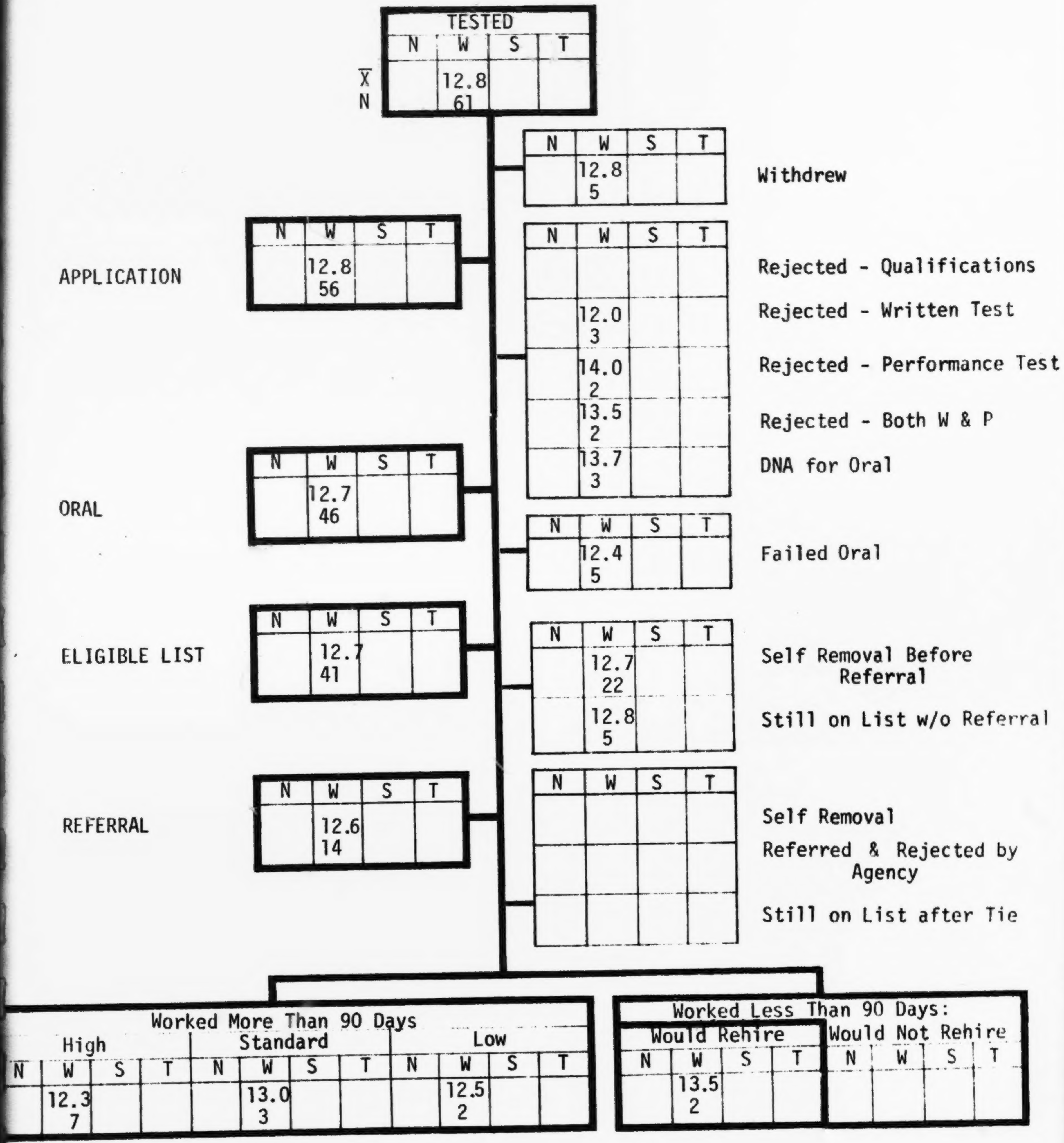
TESTED	N	W	S	T
$\overline{X}$		32.6		
N		63		

	N	W	S	T
Withdrew		21.6 5		
APPLICATION		33.5 58		
Rejected - Qualifications				
Rejected - Written Test		51.0 3		
Rejected - Performance Test		53.5 2		
Rejected - Both W & P		42.0 2		
DNA for Oral		22.7 3		
ORAL		31.9 48		
Failed Oral		39.6 5		
ELIGIBLE LIST		31.0 43		
Self Removal Before Referral		28.9 22		
Still on List w/o Referral		31.5 6		
REFERRAL		34.0 15		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days	N	W	S	T
High		37.4 8		
Standard		29.7 3		
Low		37.0 2		

Worked Less Than 90 Days:	N	W	S	T
Would Rehire		24.0 2		
Would Not Rehire				

Graph 78. Age by Selection Stage - Group Three



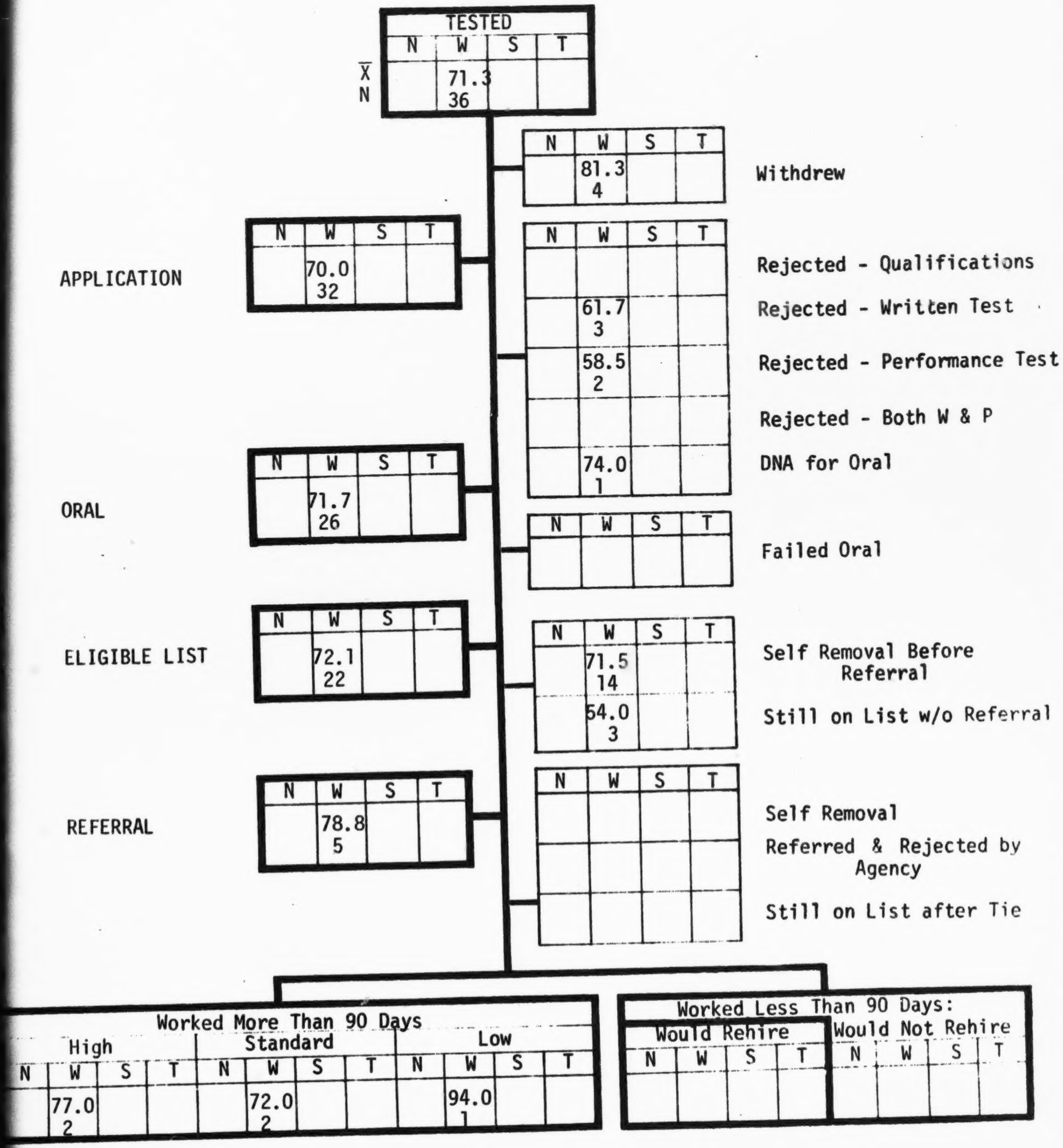
		N	W	S	T
TESTED	$\overline{X}$ N		12.8 61		
APPLICATION			12.8 56		
ORAL			12.7 46		
ELIGIBLE LIST			12.7 41		
REFERRAL			12.6 14		

	N	W	S	T
Withdrew		12.8 5		
Rejected - Qualifications				
Rejected - Written Test		12.0 3		
Rejected - Performance Test		14.0 2		
Rejected - Both W & P		13.5 2		
DNA for Oral		13.7 3		
Failed Oral		12.4 5		
Self Removal Before Referral		12.7 22		
Still on List w/o Referral		12.8 5		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

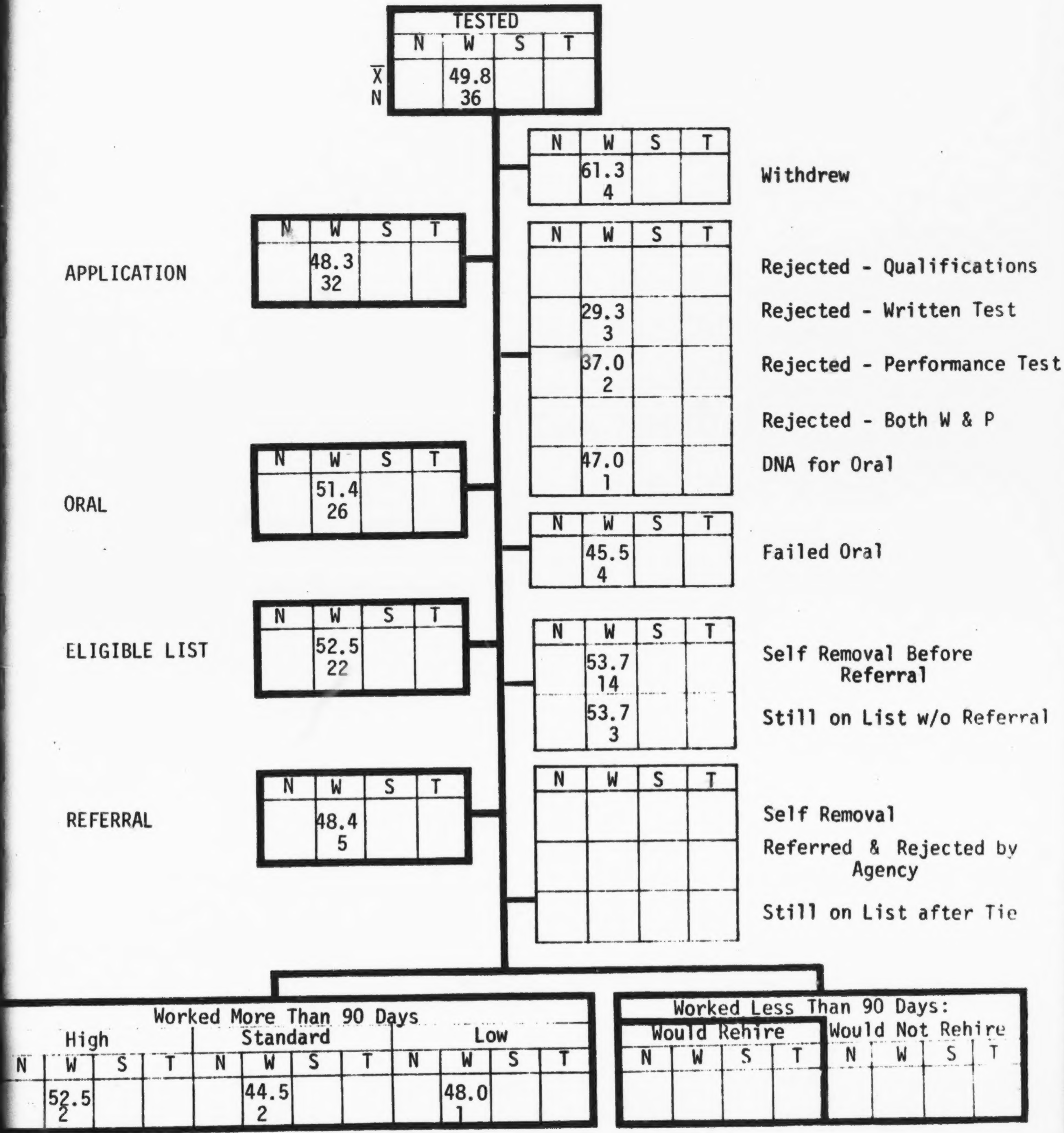
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	12.3 7				13.0 3				12.5 2		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	13.5 2						

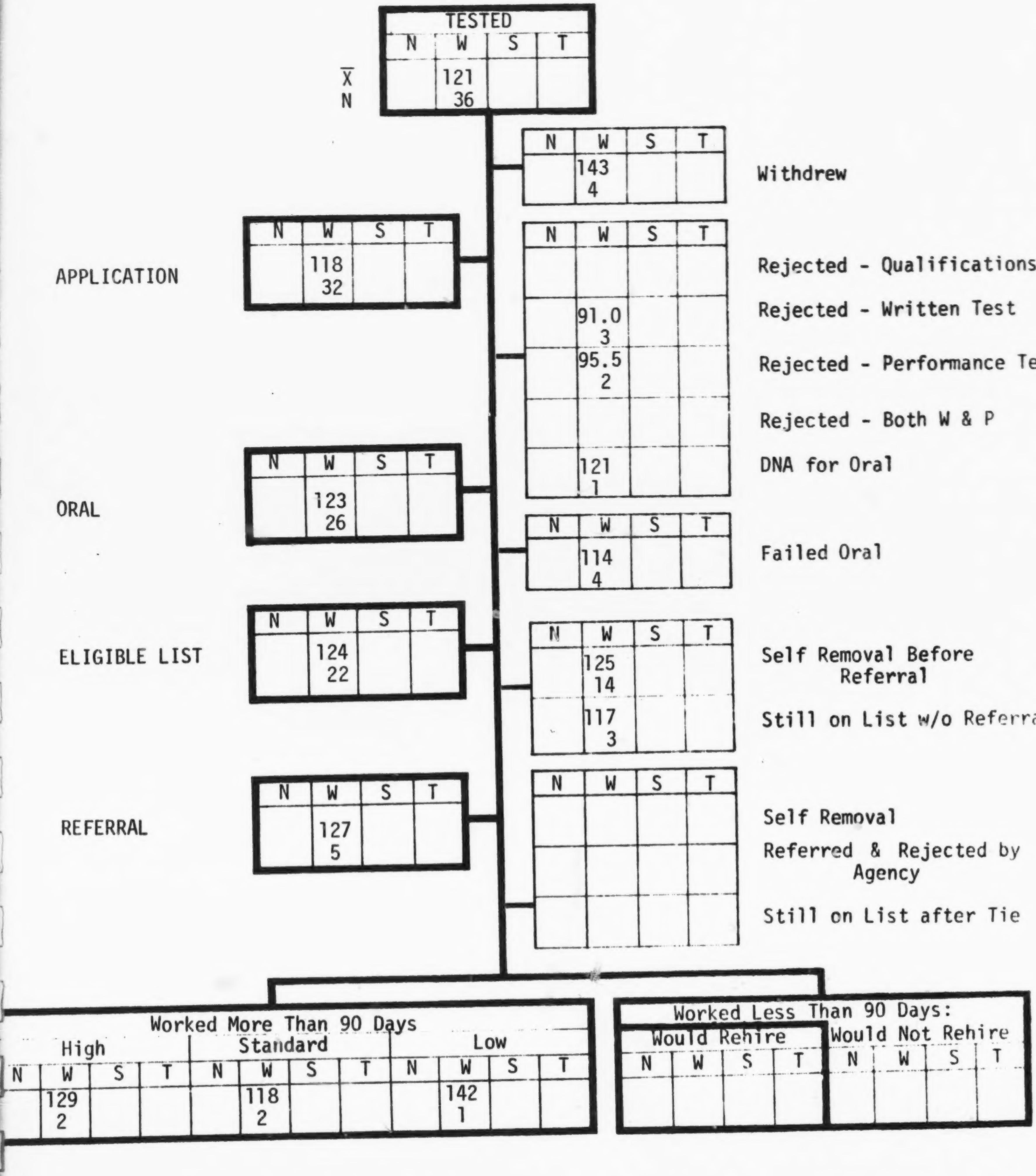
Graph 79. Education by Selection Stage - Group Three


TESTED
N W S T
X̄
N
71.3
36
N W S T
81.3
4
Withdrew
APPLICATION
N W S T
70.0
32
N W S T
Rejected - Qualifications
Rejected - Written Test
61.7
3
Rejected - Performance Test
58.5
2
Rejected - Both W & P
DNA for Oral
74.0
1
ORAL
N W S T
71.7
26
N W S T
Failed Oral
ELIGIBLE LIST
N W S T
72.1
22
N W S T
Self Removal Before Referral
71.5
14
Still on List w/o Referral
54.0
3
REFERRAL
N W S T
78.8
5
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
77.0
2
Standard
N W S T
72.0
2
Low
N W S T
94.0
1
Worked Less Than 90 Days:
Would Rehire
N W S T
Would Not Rehire
N W S T

Graph 80. Book I-A Score by Selection Stage - Group Three


TESTED
N W S T
X̄ 49.8
N 36
Withdrew
N W S T
61.3
4
APPLICATION
N W S T
48.3
32
Rejected - Qualifications
Rejected - Written Test
29.3
3
Rejected - Performance Test
37.0
2
Rejected - Both W & P
DNA for Oral
47.0
1
ORAL
N W S T
51.4
26
Failed Oral
45.5
4
ELIGIBLE LIST
N W S T
52.5
22
Self Removal Before Referral
53.7
14
Still on List w/o Referral
53.7
3
REFERRAL
N W S T
48.4
5
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
52.5
2
Standard
N W S T
44.5
2
Low
N W S T
48.0
1
Worked Less Than 90 Days:
Would Rehire
N W S T
Would Not Rehire
N W S T

Graph 81. Book I -B Score by Selection Stage - Group Three



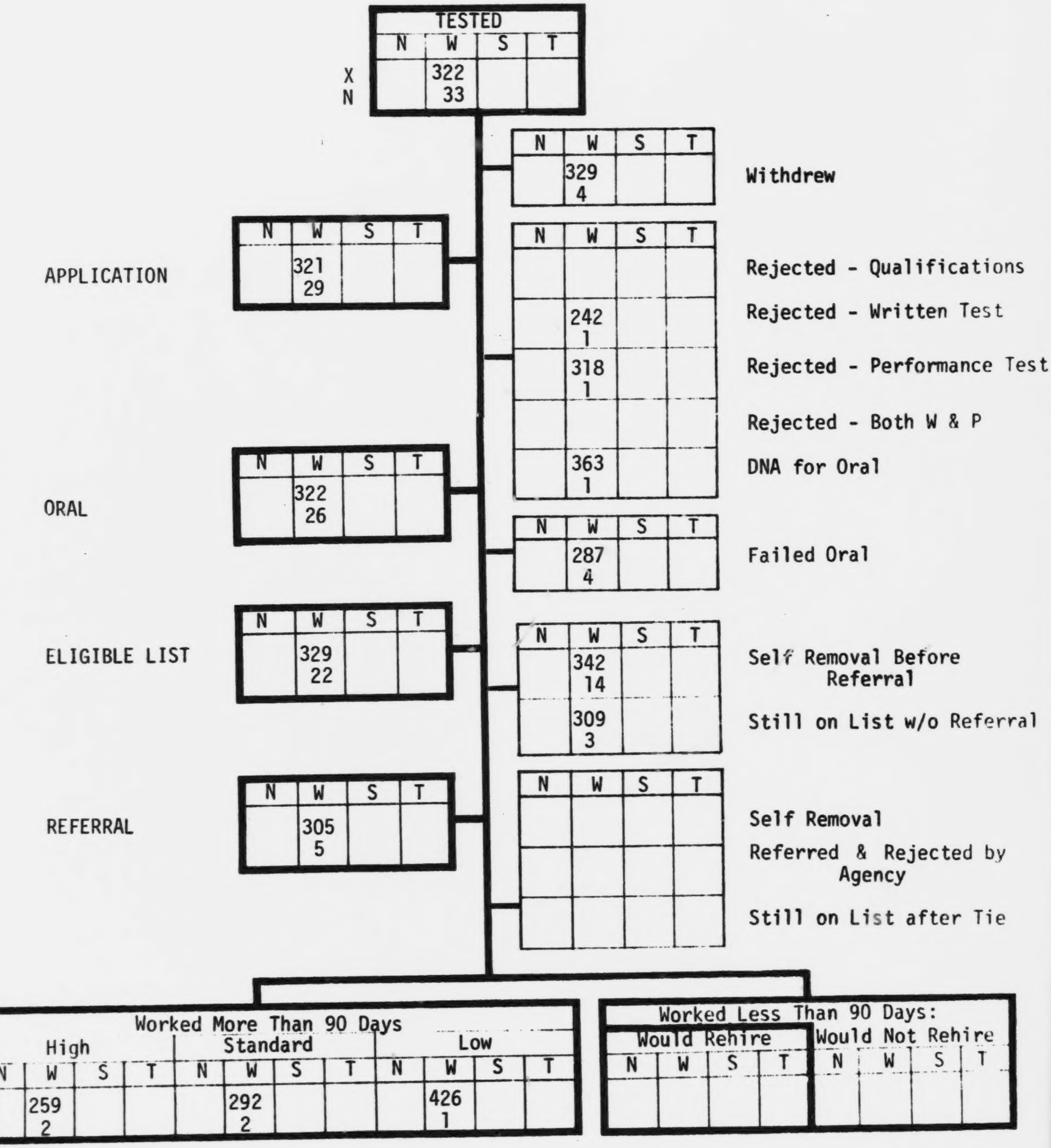
TESTED	N	W	S	T
$\overline{X}$		121		
N		36		

	N	W	S	T
Withdrew		143 4		
APPLICATION		118 32		
Rejected - Qualifications				
Rejected - Written Test		91.0 3		
Rejected - Performance Test		95.5 2		
Rejected - Both W & P				
DNA for Oral		121 1		
ORAL		123 26		
Failed Oral		114 4		
ELIGIBLE LIST		124 22		
Self Removal Before Referral		125 14		
Still on List w/o Referral		117 3		
REFERRAL		127 5		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	129 2				118 2				142 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T

Graph 82. Books I-A and B Combined Score by Selection Stage - Group Three



TESTED	N	W	S	T
X		322		
N		33		

APPLICATION	N	W	S	T
		321 29		

	N	W	S	T
Withdrew		329 4		

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		242 1		
Rejected - Performance Test		318 1		
Rejected - Both W & P				
DNA for Oral		363 1		

ORAL	N	W	S	T
		322 26		

	N	W	S	T
Failed Oral		287 4		

ELIGIBLE LIST	N	W	S	T
		329 22		

	N	W	S	T
Self Removal Before Referral		342 14		
Still on List w/o Referral		309 3		

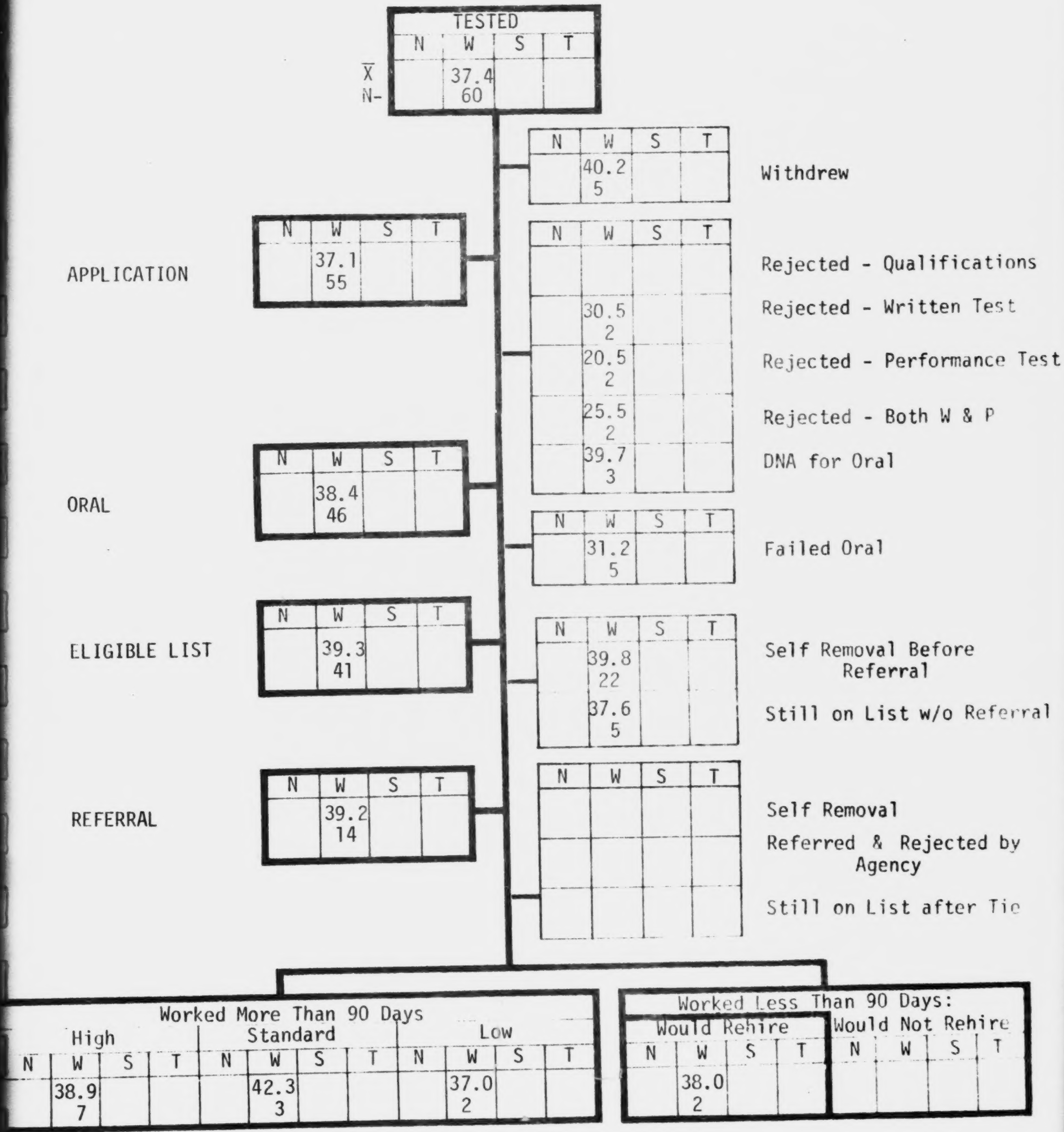
REFERRAL	N	W	S	T
		305 5		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

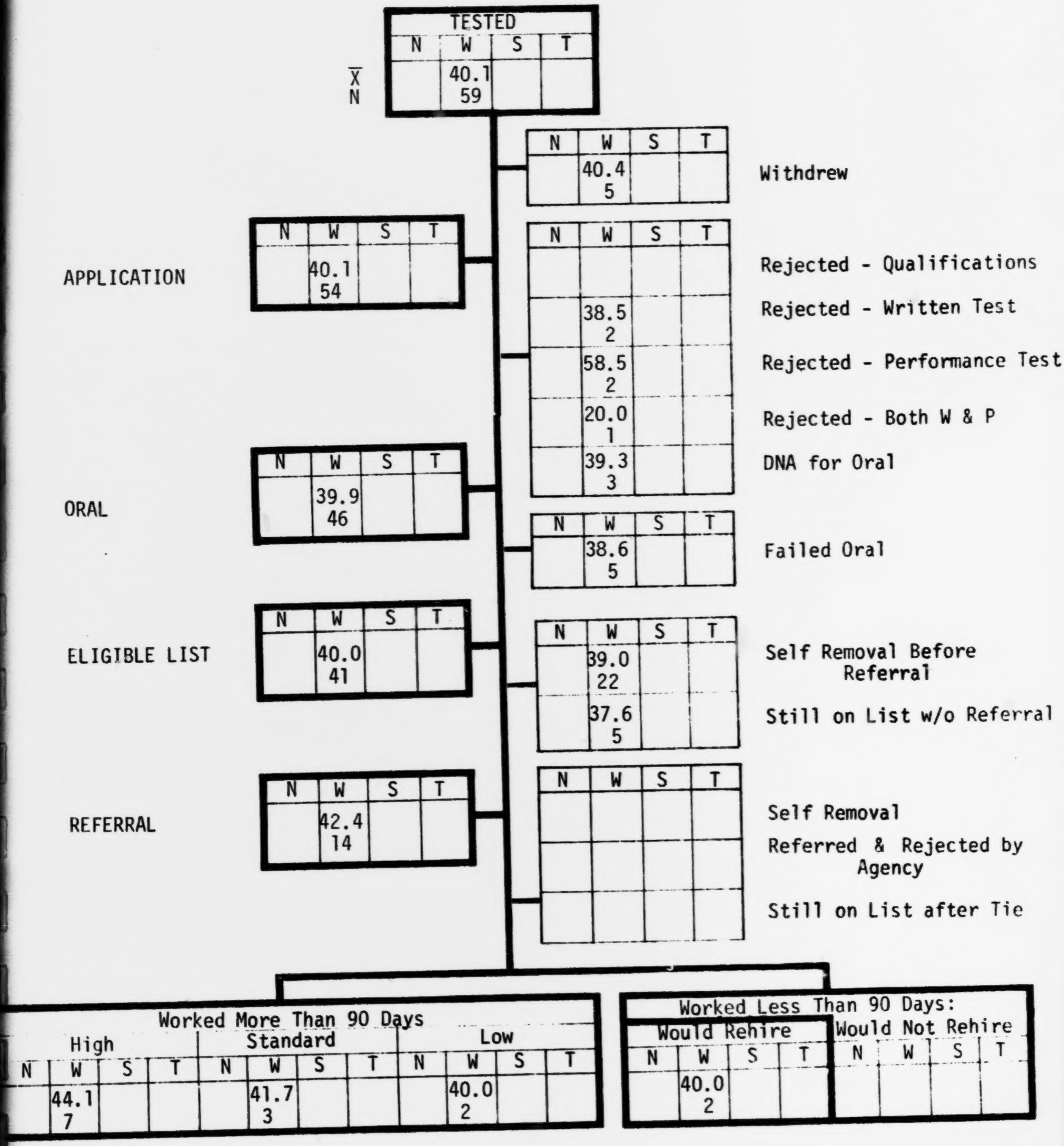
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	259 2				292 2				426 1		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T

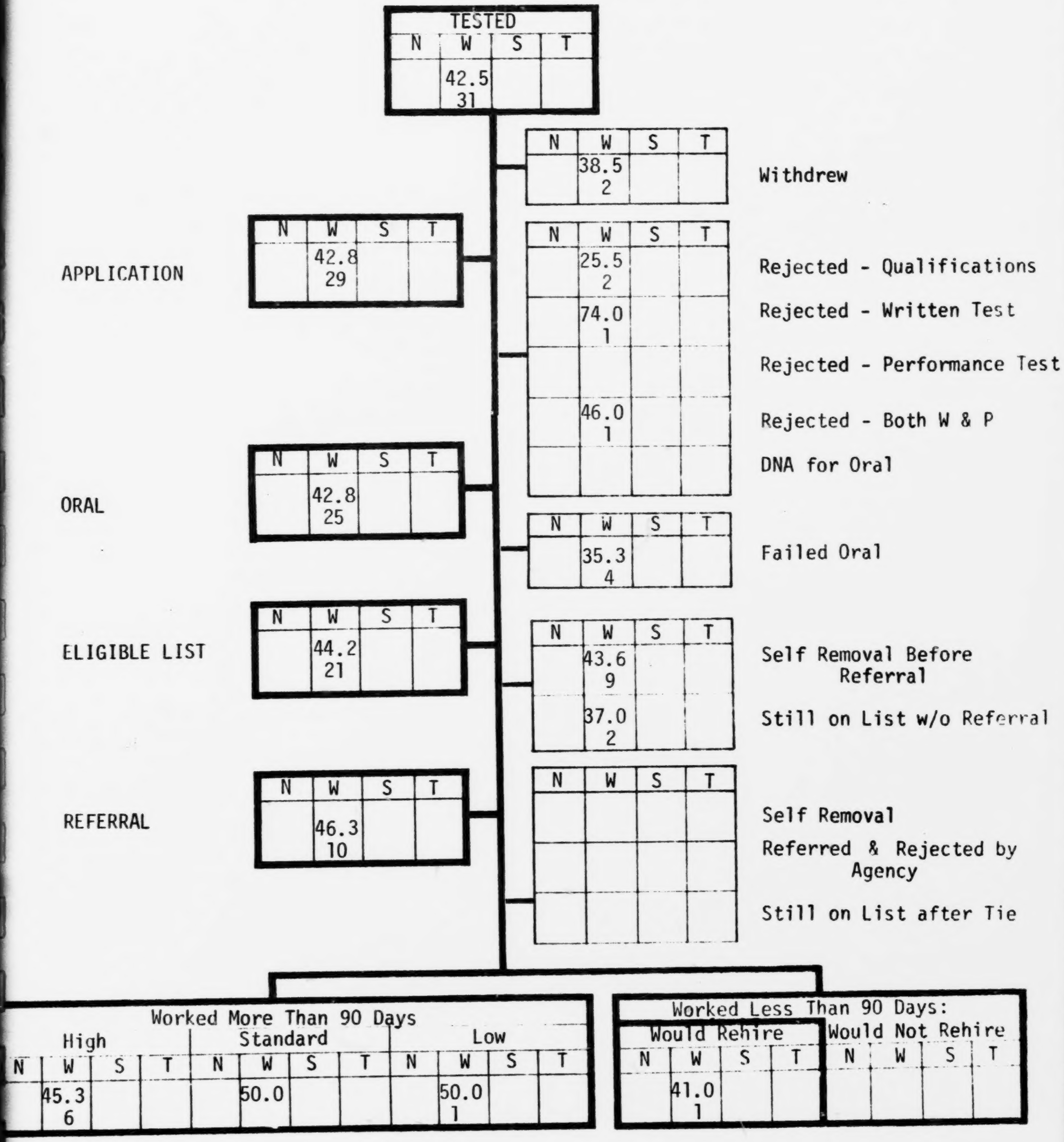
Graph 83. Books I-A and B Weighted Score by Selection Stage - Group Three


TESTED
N W S T
X̄ 37.4
N- 60
N W S T
40.2
5
Withdrew
APPLICATION
N W S T
37.1
55
N W S T
Rejected - Qualifications
30.5
2
Rejected - Written Test
20.5
2
Rejected - Performance Test
25.5
2
Rejected - Both W & P
39.7
3
DNA for Oral
ORAL
N W S T
38.4
46
N W S T
31.2
5
Failed Oral
ELIGIBLE LIST
N W S T
39.3
41
N W S T
39.8
22
Self Removal Before Referral
37.6
5
Still on List w/o Referral
REFERRAL
N W S T
39.2
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
38.9
7
Standard
N W S T
42.3
3
Low
N W S T
37.0
2
Worked Less Than 90 Days:
Would Rehire
N W S T
38.0
2
Would Not Rehire
N W S T

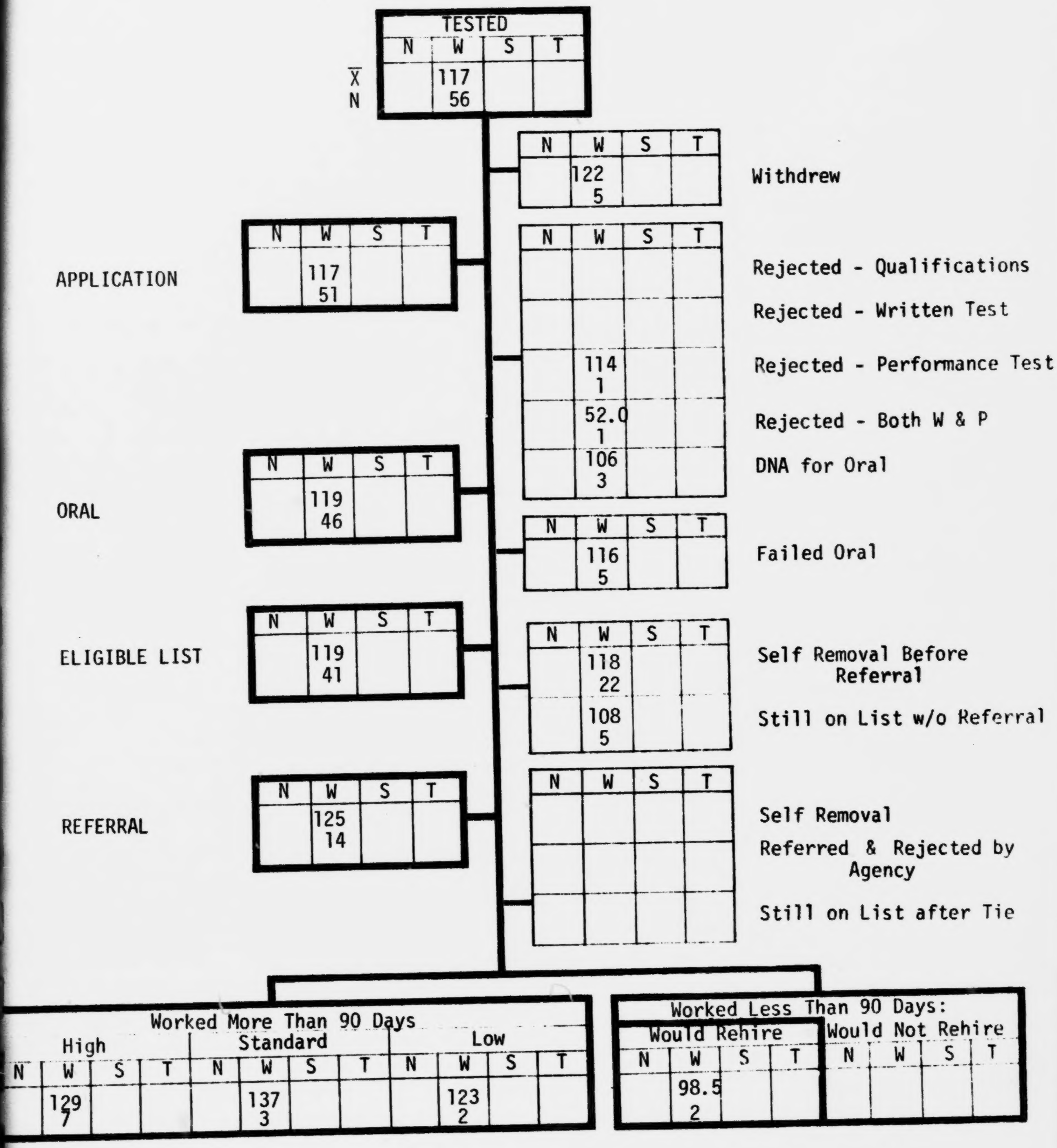
Group 84. Book II-A Score by Selection Stage - Group Three


TESTED
N W S T
X̄
N
40.1
59
N W S T
40.4
5
Withdrew
APPLICATION
N W S T
40.1
54
N W S T
Rejected - Qualifications
38.5
2
Rejected - Written Test
58.5
2
Rejected - Performance Test
20.0
1
Rejected - Both W & P
39.3
3
DNA for Oral
ORAL
N W S T
39.9
46
N W S T
38.6
5
Failed Oral
ELIGIBLE LIST
N W S T
40.0
41
N W S T
39.0
22
Self Removal Before Referral
37.6
5
Still on List w/o Referral
REFERRAL
N W S T
42.4
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
44.1
7
Standard
N W S T
41.7
3
Low
N W S T
40.0
2
Worked Less Than 90 Days:
Would Rehire
N W S T
40.0
2
Would Not Rehire
N W S T

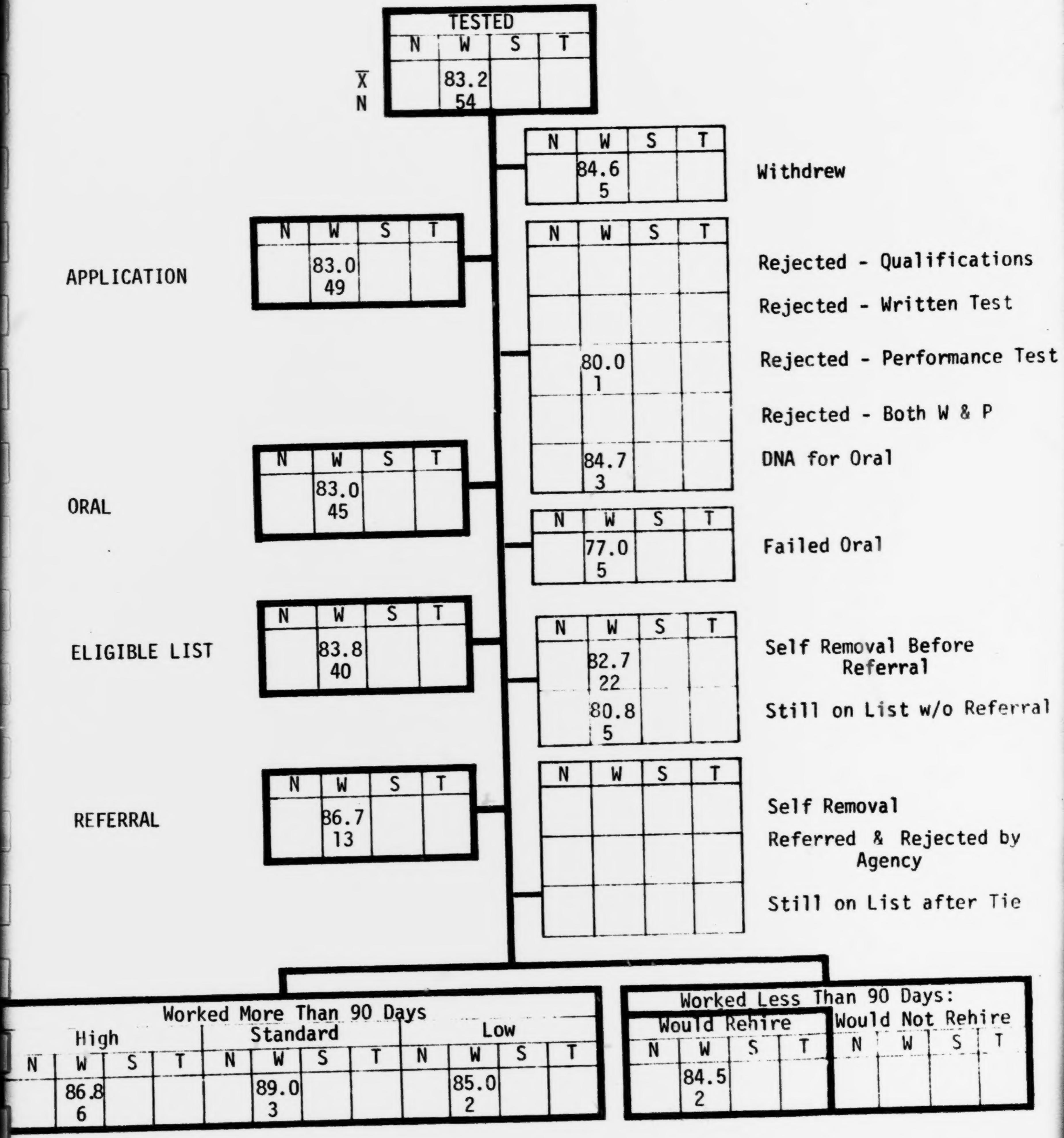
Graph 85. Book II-B Score by Selection Stage - Group Three


TESTED
N W S T
42.5
31
N W S T
38.5
2
Withdrew
APPLICATION
N W S T
42.8
29
N W S T
25.5
2
Rejected - Qualifications
74.0
1
Rejected - Written Test
Rejected - Performance Test
46.0
1
Rejected - Both W & P
DNA for Oral
ORAL
N W S T
42.8
25
N W S T
35.3
4
Failed Oral
ELIGIBLE LIST
N W S T
44.2
21
N W S T
43.6
9
Self Removal Before Referral
37.0
2
Still on List w/o Referral
REFERRAL
N W S T
46.3
10
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
45.3
6
Standard
N W S T
50.0
Low
N W S T
50.0
1
Worked Less Than 90 Days:
Would Rehire
N W S T
41.0
1
Would Not Rehire
N W S T

Graph 86. Book II-C Score by Selection Stage - Group Three


TESTED
N W S T
X̄ N
117
56
N W S T
122
5
Withdrew
APPLICATION
N W S T
117
51
N W S T
Rejected - Qualifications
Rejected - Written Test
114
1
Rejected - Performance Test
52.0
1
Rejected - Both W & P
106
3
DNA for Oral
ORAL
N W S T
119
46
N W S T
116
5
Failed Oral
ELIGIBLE LIST
N W S T
119
41
N W S T
118
22
Self Removal Before Referral
108
5
Still on List w/o Referral
REFERRAL
N W S T
125
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
129
7
Standard
N W S T
137
3
Low
N W S T
123
2
Worked Less Than 90 Days:
Would Rehire
N W S T
98.5
2
Would Not Rehire
N W S T

Graph 87. Total Raw Score by Selection Stage - Group Three



TESTED

	N	W	S	T
X̄		83.2		
N		54		

	N	W	S	T
Withdrew		84.6 5		

	N	W	S	T
APPLICATION		83.0 49		

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test		80.0 1		
Rejected - Both W & P				
DNA for Oral		84.7 3		

	N	W	S	T
ORAL		83.0 45		

	N	W	S	T
Failed Oral		77.0 5		

	N	W	S	T
ELIGIBLE LIST		83.8 40		

	N	W	S	T
Self Removal Before Referral		82.7 22		
Still on List w/o Referral		80.8 5		

	N	W	S	T
REFERRAL		86.7 13		

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

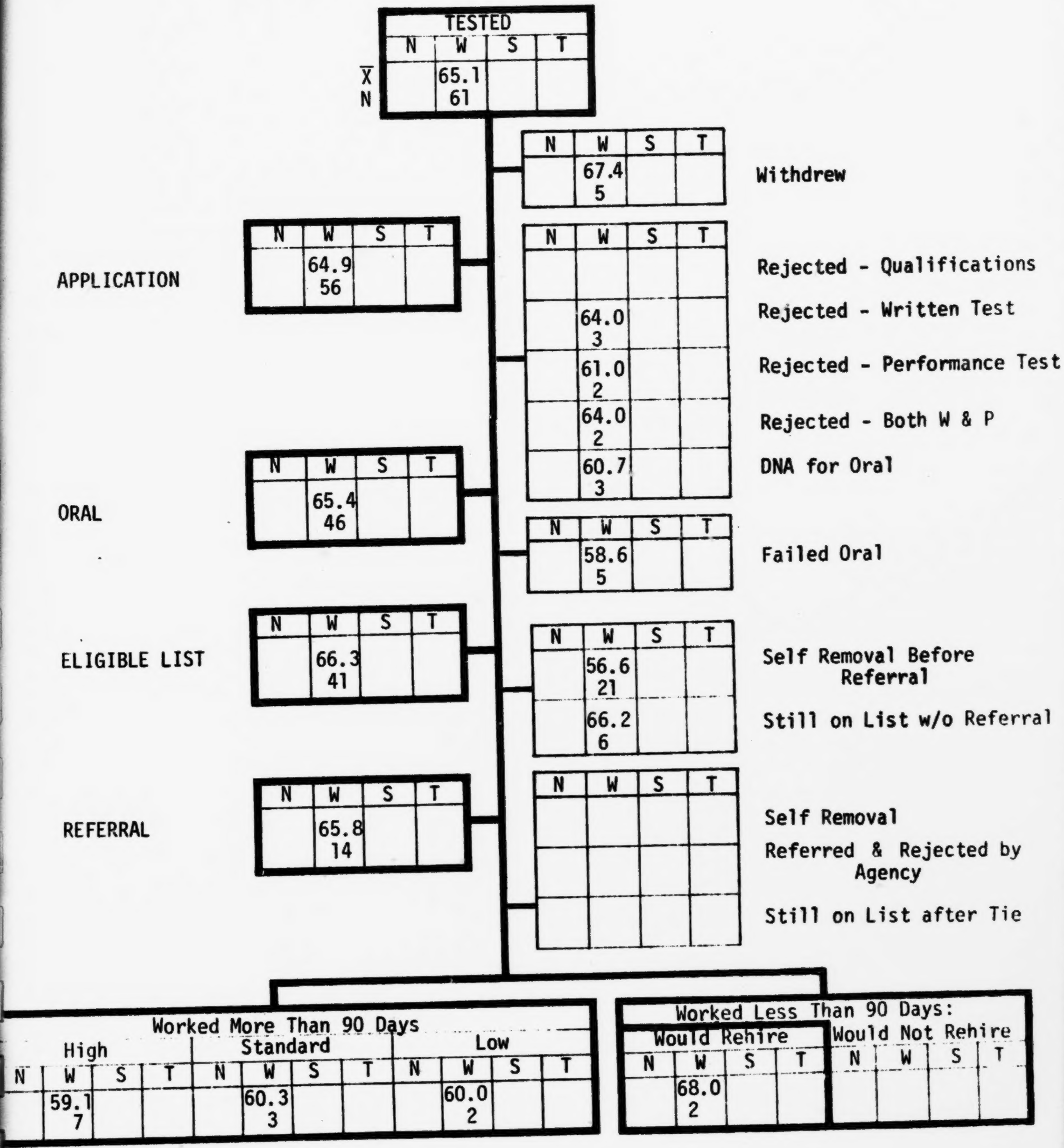
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	86.8 6				89.0 3				85.0 2		

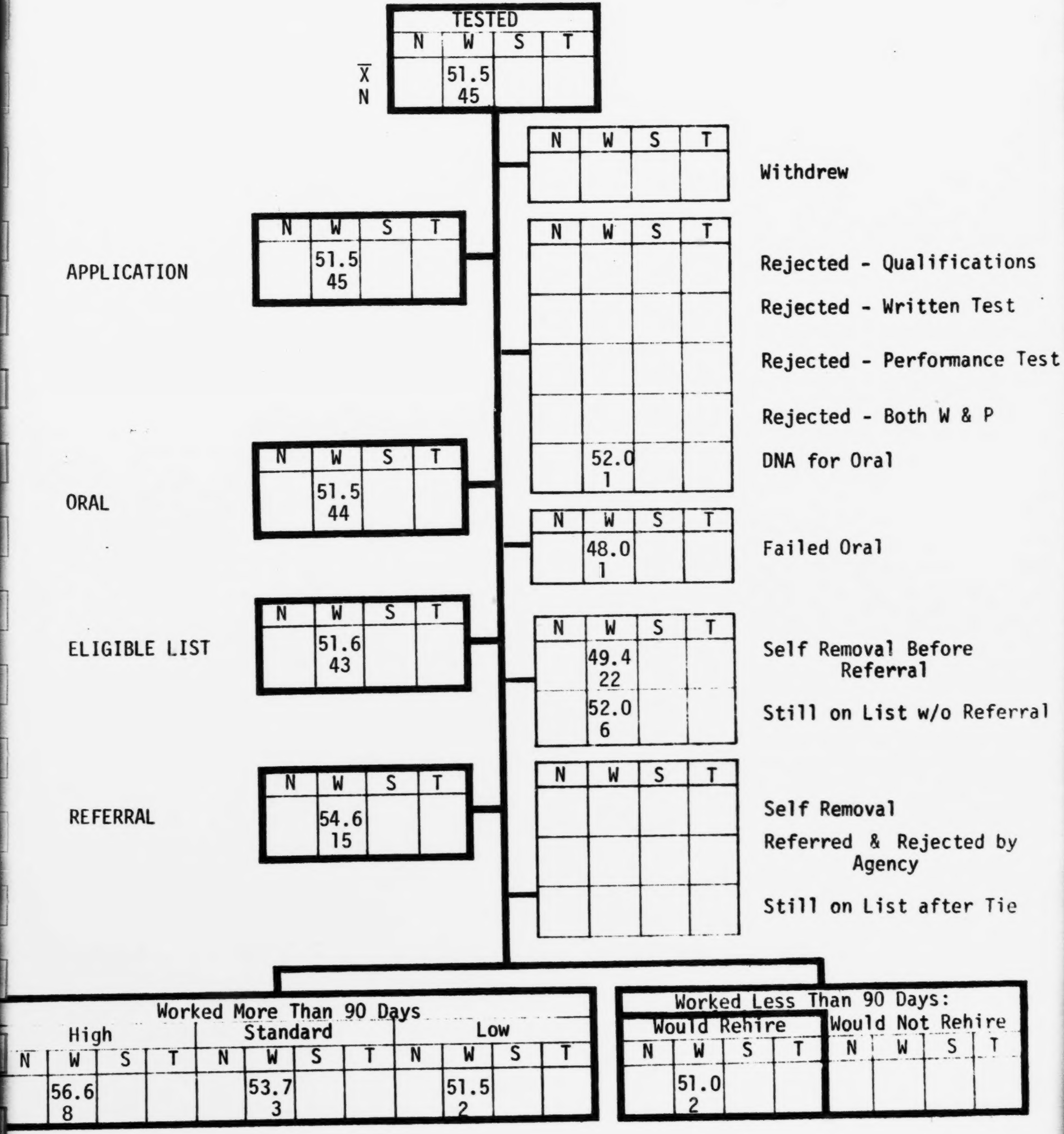
Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	84.5 2						

Graph 88. Converted Score by Selection Stage - Group Three

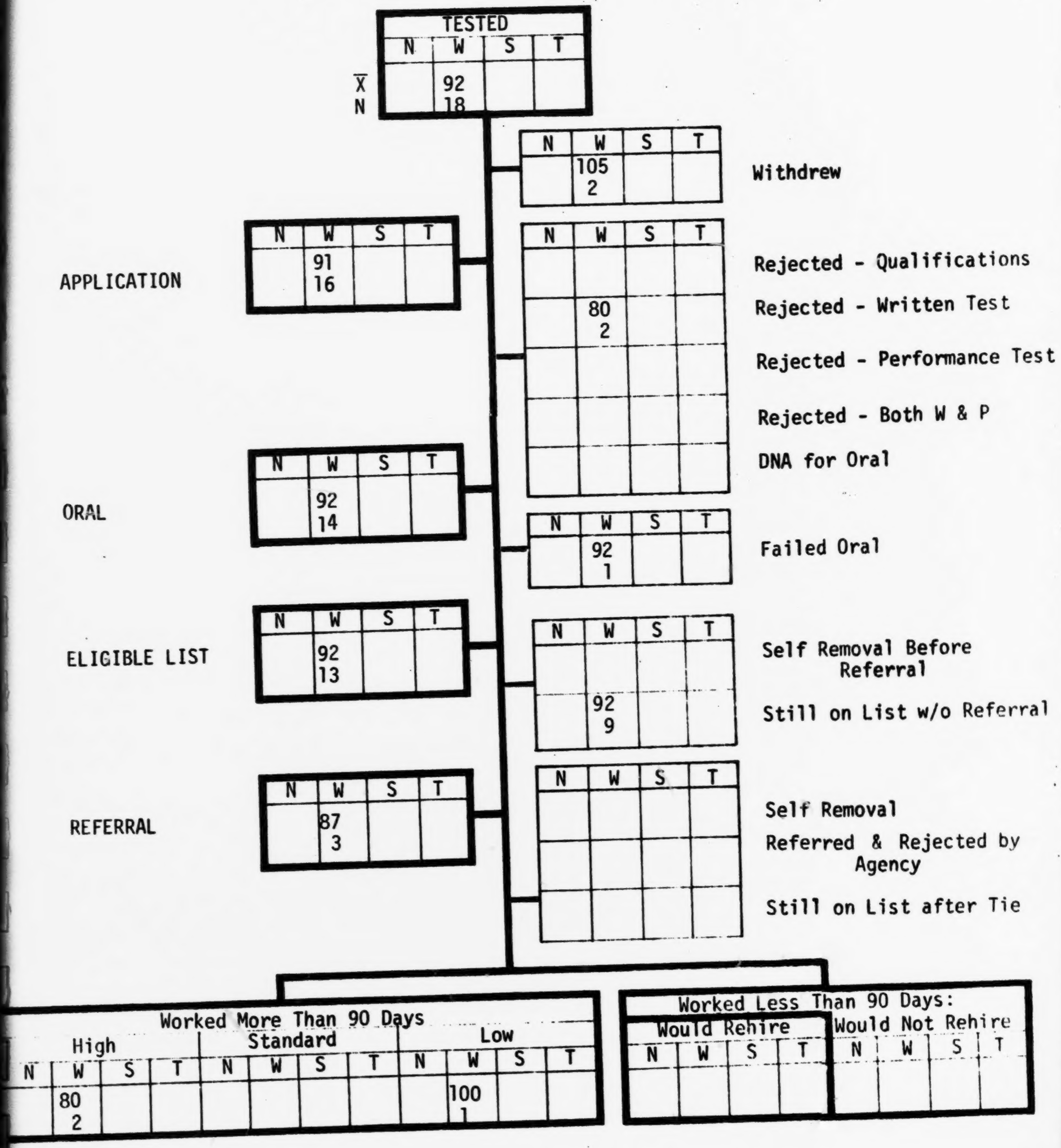

TESTED
N W S T
X̄ 65.1
N 61
N W S T
67.4
5
Withdrew
APPLICATION
N W S T
64.9
56
N W S T
Rejected - Qualifications
64.0
3
Rejected - Written Test
61.0
2
Rejected - Performance Test
64.0
2
Rejected - Both W & P
60.7
3
DNA for Oral
ORAL
N W S T
65.4
46
N W S T
58.6
5
Failed Oral
ELIGIBLE LIST
N W S T
66.3
41
N W S T
56.6
21
Self Removal Before Referral
66.2
6
Still on List w/o Referral
REFERRAL
N W S T
65.8
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
59.1
7
Standard
N W S T
60.3
3
Low
N W S T
60.0
2
Worked Less Than 90 Days:
Would Rehire
N W S T
68.0
2
Would Not Rehire
N W S T

Graph 89. Typing Score by Selection Stage - Group Three

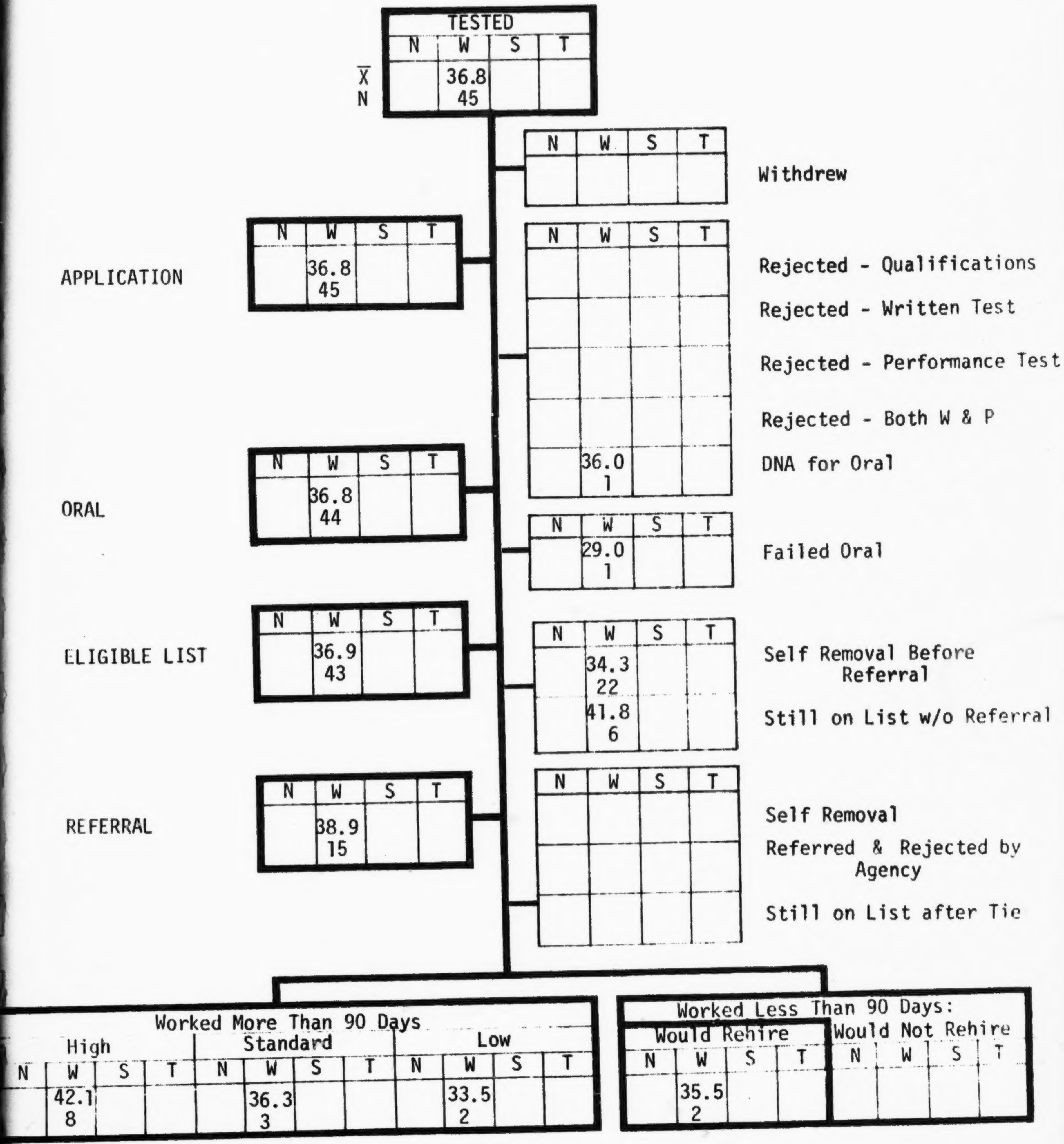


	N	W	S	T
TESTED ($\overline{X}$ N)		51.5 45		
Withdrew				
APPLICATION		51.5 45		
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test				
Rejected - Both W & P				
DNA for Oral		52.0 1		
ORAL		51.5 44		
Failed Oral		48.0 1		
ELIGIBLE LIST		51.6 43		
Self Removal Before Referral		49.4 22		
Still on List w/o Referral		52.0 6		
REFERRAL		54.6 15		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				
Worked More Than 90 Days - High		56.6 8		
Worked More Than 90 Days - Standard		53.7 3		
Worked More Than 90 Days - Low		51.5 2		
Worked Less Than 90 Days: Would Rehire		51.0 2		
Worked Less Than 90 Days: Would Not Rehire				

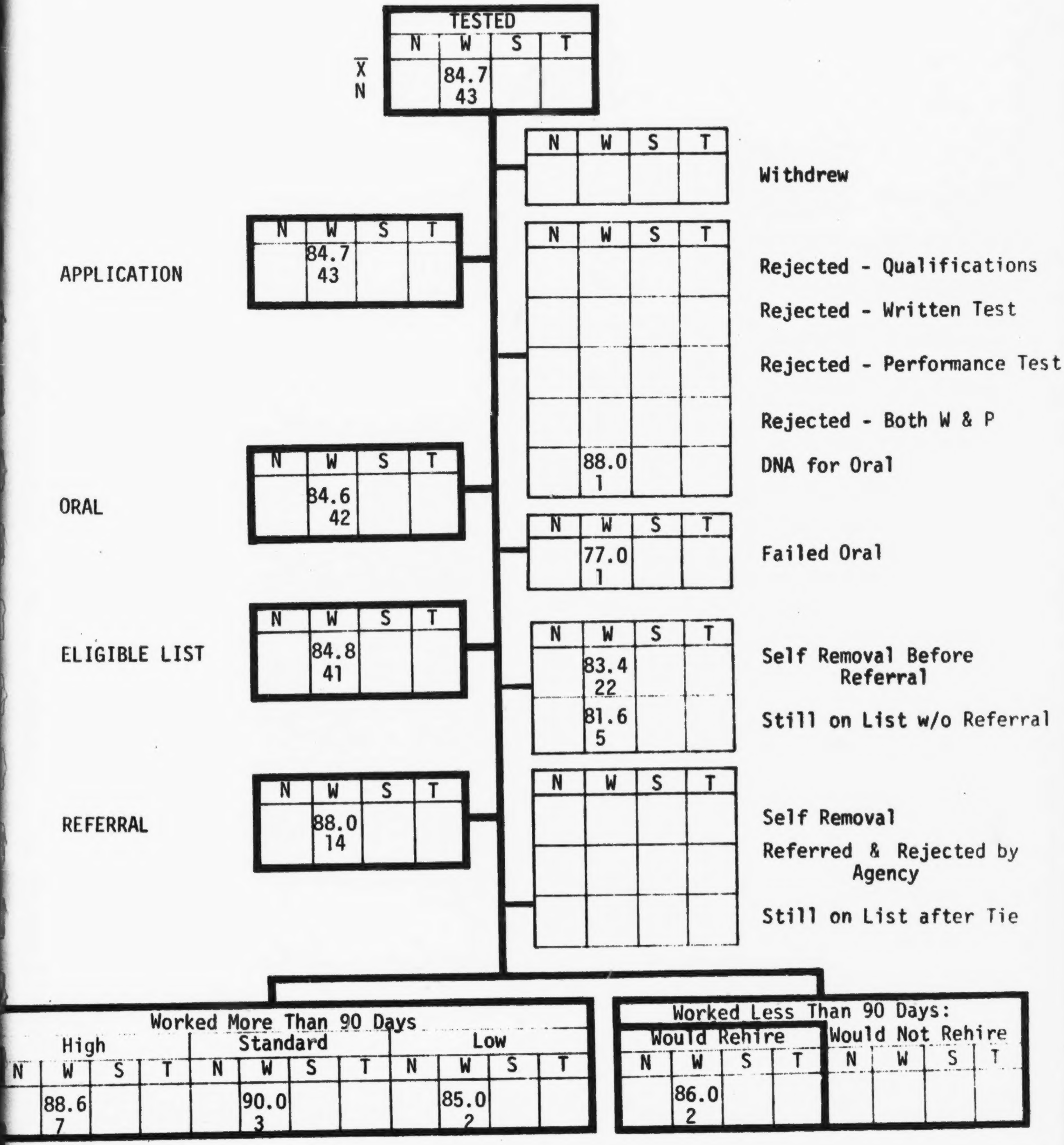
Graph 90. Written Score by Selection Stage - Group Three


TESTED
N W S T
X̄ 92
N 18
N W S T
105
2
Withdrew
APPLICATION
N W S T
91
16
N W S T
Rejected - Qualifications
Rejected - Written Test
80
2
Rejected - Performance Test
Rejected - Both W & P
DNA for Oral
ORAL
N W S T
92
14
N W S T
92
1
Failed Oral
ELIGIBLE LIST
N W S T
92
13
N W S T
Self Removal Before Referral
Still on List w/o Referral
92
9
REFERRAL
N W S T
87
3
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
Standard
Low
N W S T N W S T N W S T
80
2
100
1
Worked Less Than 90 Days:
Would Rehire
Would Not Rehire
N W S T N W S T

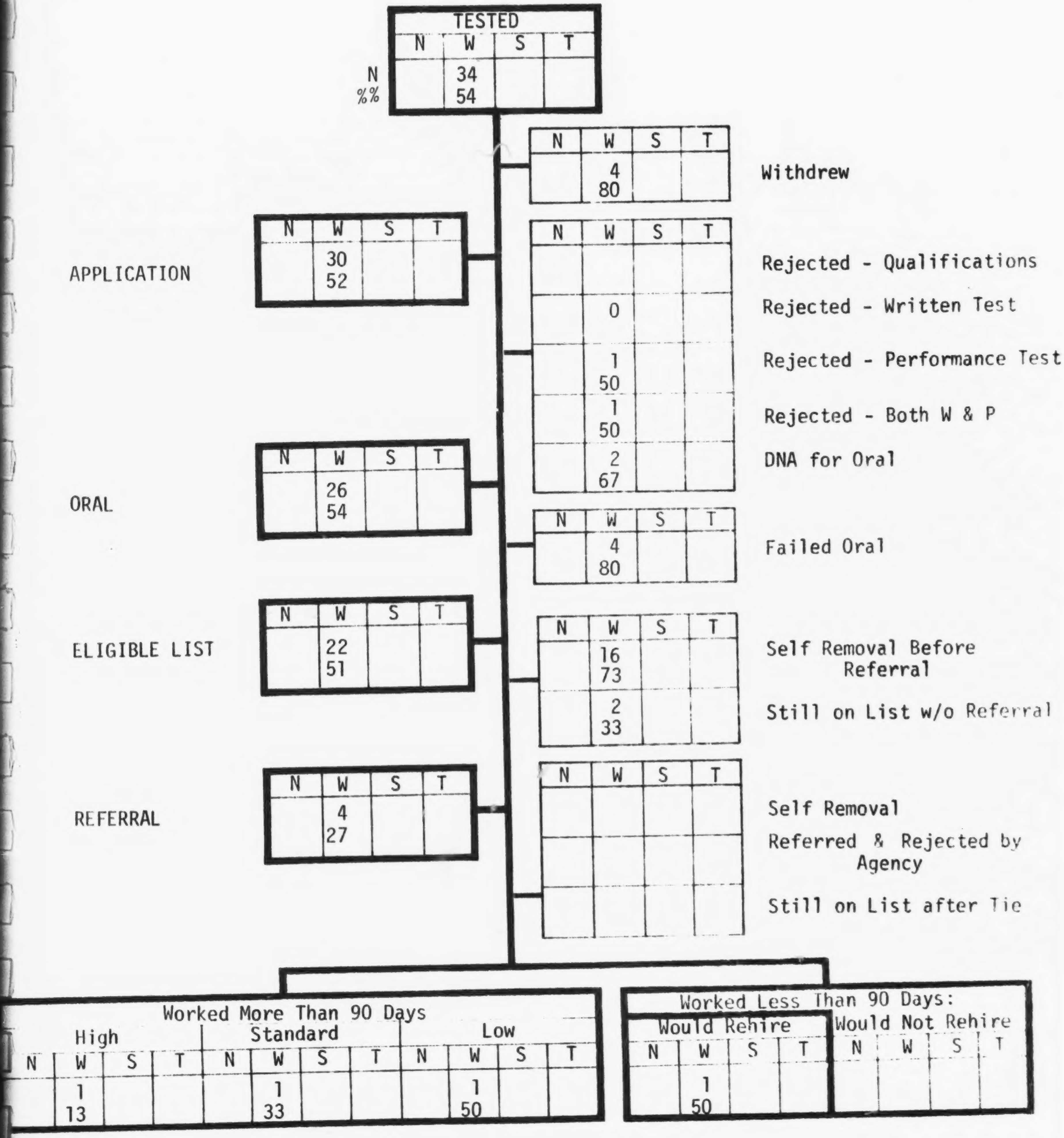
Graph 91. Steno Score by Selection Stage - Group Three


TESTED
N W S T
X̄
N
36.8
45
N W S T
Withdrew
APPLICATION
N W S T
36.8
45
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
36.0
1
DNA for Oral
ORAL
N W S T
36.8
44
N W S T
29.0
1
Failed Oral
ELIGIBLE LIST
N W S T
36.9
43
N W S T
34.3
22
Self Removal Before Referral
41.8
6
Still on List w/o Referral
REFERRAL
N W S T
38.9
15
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
42.1
8
Standard
N W S T
36.3
3
Low
N W S T
33.5
2
Worked Less Than 90 Days:
Would Rehire
N W S T
35.5
2
Would Not Rehire
N W S T

Graph 92 . Oral Rating by Selection Stage - Group Three


TESTED
N W S T
$\overline{X}$
N
84.7
43
N W S T
Withdrew
APPLICATION
N W S T
84.7
43
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
DNA for Oral
88.0
1
ORAL
N W S T
84.6
42
N W S T
Failed Oral
77.0
1
ELIGIBLE LIST
N W S T
84.8
41
N W S T
Self Removal Before Referral
83.4
22
Still on List w/o Referral
81.6
5
REFERRAL
N W S T
88.0
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
88.6
7
Standard
N W S T
90.0
3
Low
N W S T
85.0
2
Worked Less Than 90 Days:
Would Rehire
N W S T
86.0
2
Would Not Rehire
N W S T

Graph 93. Total Rounded Score by Selection Stage - Group Three



TESTED	N	W	S	T
N		34		
%%		54		

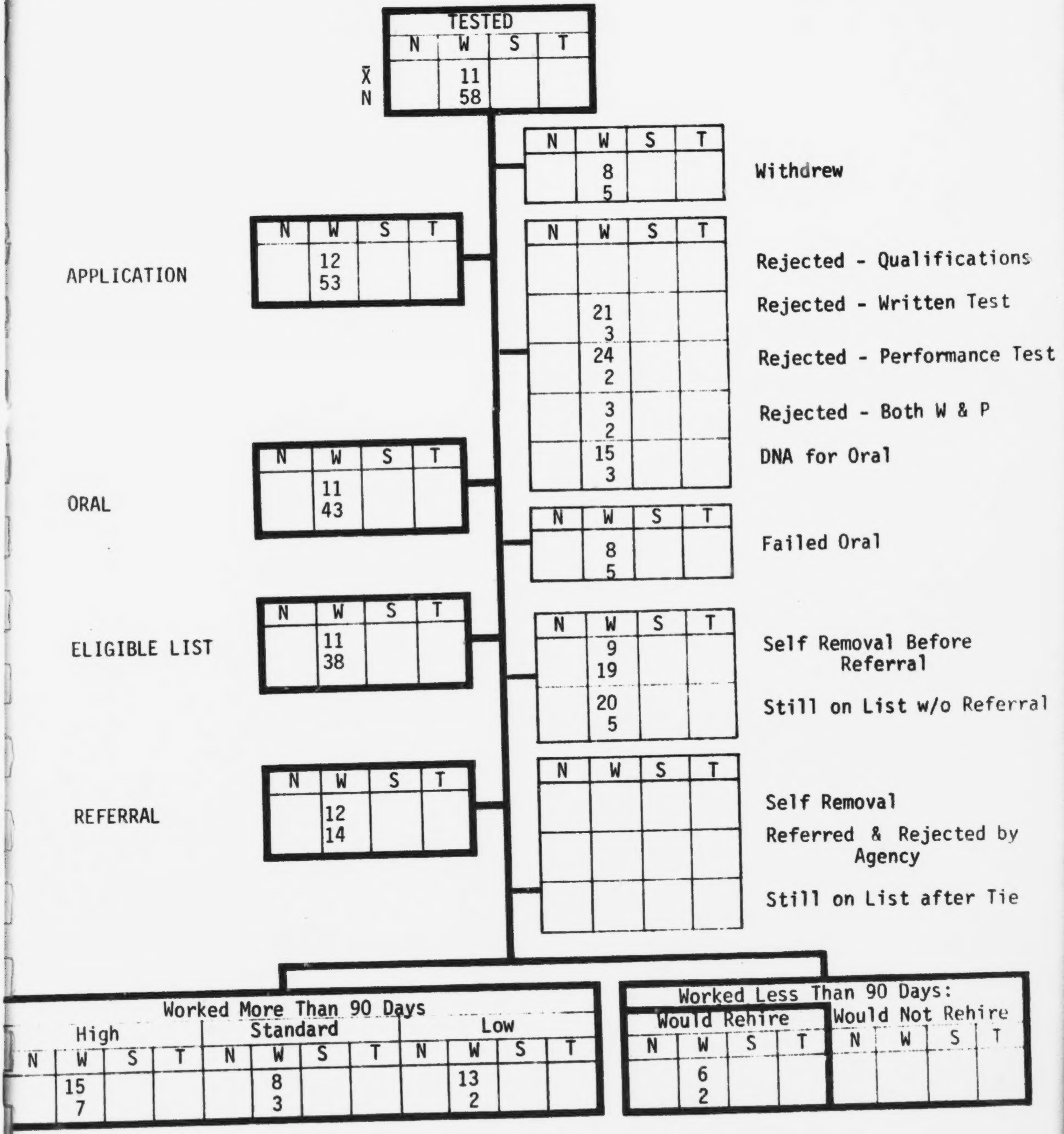
	N	W	S	T
APPLICATION		30 52		
ORAL		26 54		
ELIGIBLE LIST		22 51		
REFERRAL		4 27		

	N	W	S	T
Withdrew		4 80		
Rejected - Qualifications				
Rejected - Written Test		0		
Rejected - Performance Test		1 50		
Rejected - Both W & P		1 50		
DNA for Oral		2 67		
Failed Oral		4 80		
Self Removal Before Referral		16 73		
Still on List w/o Referral		2 33		
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

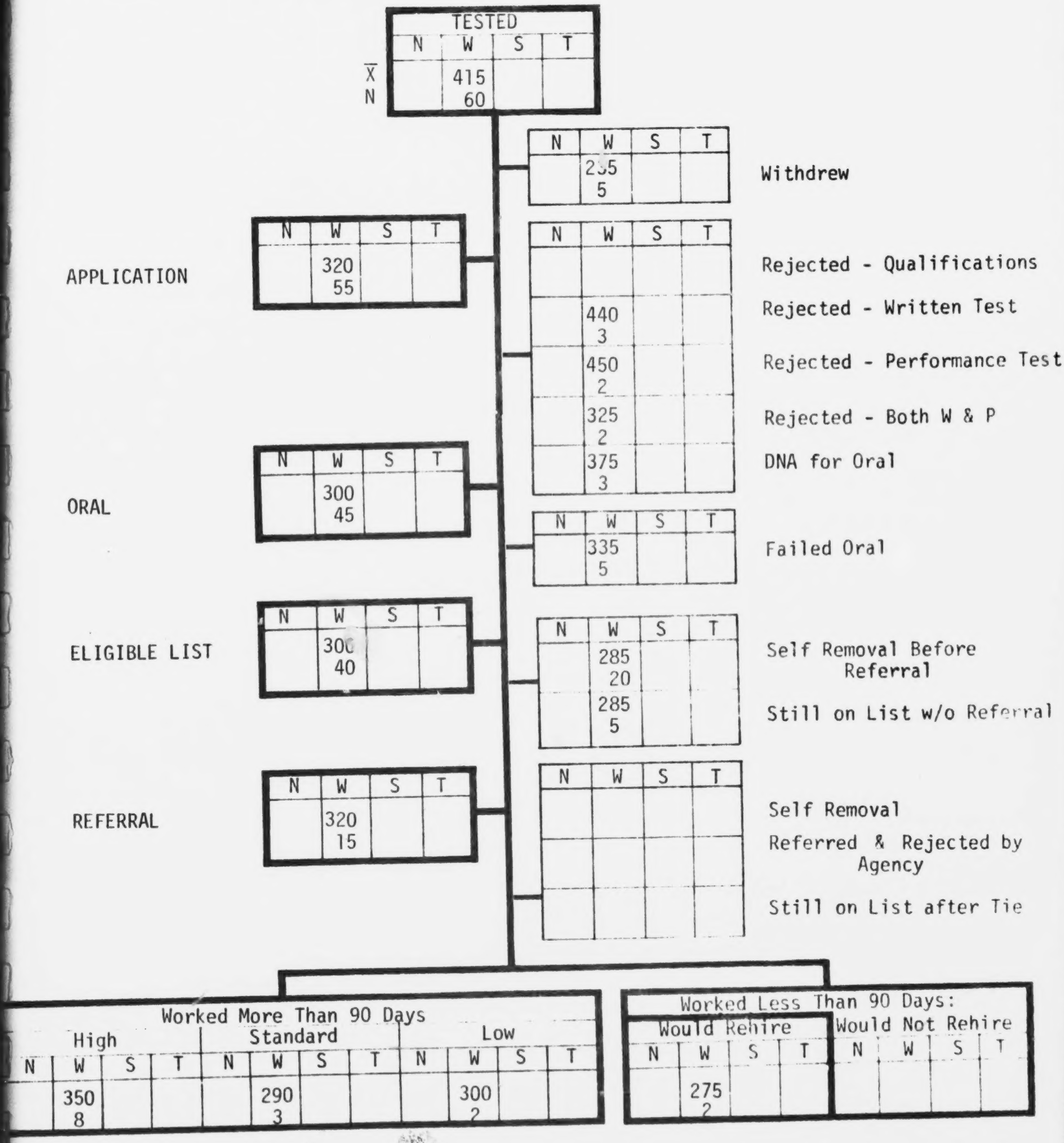
Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	1 13				1 33				1 50		

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	1 50						

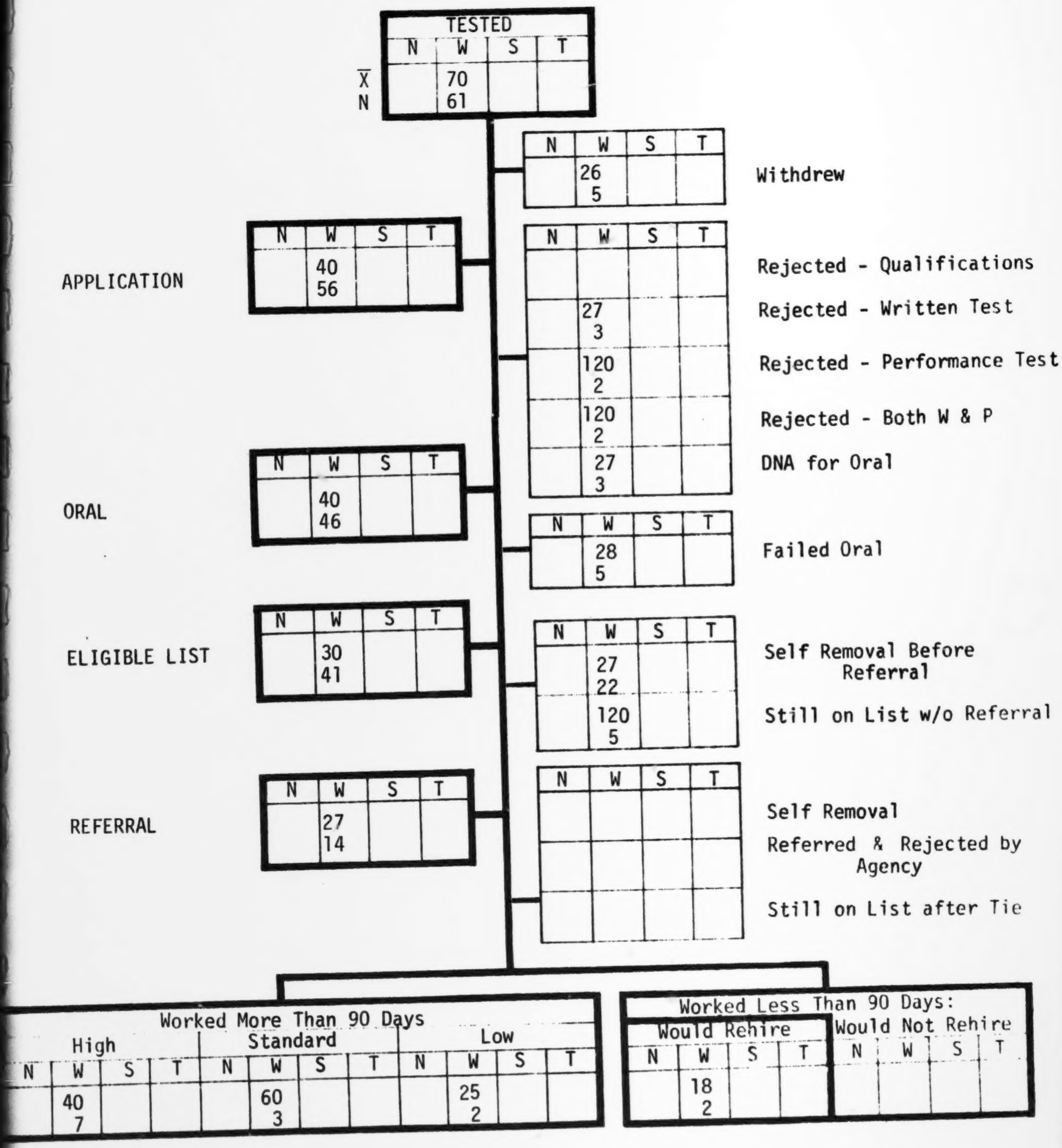
Graph 94. Marital Status (Yes) by Selection Stage - Group Three


TESTED
N W S T
X̄ 11
N 58
Withdrew
8
5
APPLICATION
12
53
Rejected - Qualifications
Rejected - Written Test
21
3
Rejected - Performance Test
24
2
Rejected - Both W & P
3
2
DNA for Oral
15
3
ORAL
11
43
Failed Oral
8
5
ELIGIBLE LIST
11
38
Self Removal Before Referral
9
19
Still on List w/o Referral
20
5
REFERRAL
12
14
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
15
7
Standard
8
3
Low
13
2
Worked Less Than 90 Days:
Would Rehire
6
2
Would Not Rehire

Graph 95. Length of Last Employment by Selection Stage - Group Three


TESTED
N W S T
X̄
N
415
60
N W S T
235
5
Withdrew
APPLICATION
N W S T
320
55
N W S T
Rejected - Qualifications
Rejected - Written Test
440
3
Rejected - Performance Test
450
2
Rejected - Both W & P
325
2
DNA for Oral
375
3
ORAL
N W S T
300
45
N W S T
335
5
Failed Oral
ELIGIBLE LIST
N W S T
300
40
N W S T
Self Removal Before Referral
285
20
Still on List w/o Referral
285
5
REFERRAL
N W S T
320
15
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
350
8
Standard
N W S T
290
3
Low
N W S T
300
2
Worked Less Than 90 Days:
Would Rehire
N W S T
275
2
Would Not Rehire
N W S T

Graph 96. Salary at Last Employment By Selection Stage - Group Three


TESTED
N W S T
X̄ 70
N 61
N W S T
26
5
Withdrew
APPLICATION
N W S T
40
56
N W S T
Rejected - Qualifications
27
3
Rejected - Written Test
120
2
Rejected - Performance Test
120
2
Rejected - Both W & P
27
3
DNA for Oral
ORAL
N W S T
40
46
N W S T
28
5
Failed Oral
ELIGIBLE LIST
N W S T
30
41
N W S T
27
22
Self Removal Before Referral
120
5
Still on List w/o Referral
REFERRAL
N W S T
27
14
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
40
7
Standard
N W S T
60
3
Low
N W S T
25
2
Worked Less Than 90 Days:
Would Rehire
N W S T
18
2
Would Not Rehire
N W S T

Graph 97. Length of Residence in Colorado by Selection Stage - Group Three

		Negro	White	Spanish Surname	Total
Group Three	Book IA		78.8(5)		
	Book IB		48.4(5)		
	Book IIA		39.2(14)		
	Book IIB		42.4(14)		

The evidence pertaining to the Written Test was not comparable,however.

In considering salary in relation to selection stage for Group Three, the influence of the relation between salary on last job and seniority is apparent. It will be recalled that those eliminated from further consideration because of tests were older than the group in general. From Graph 96 it is apparent that they had been more highly paid, and from Graph 95 it is apparent that they had held their jobs longer.

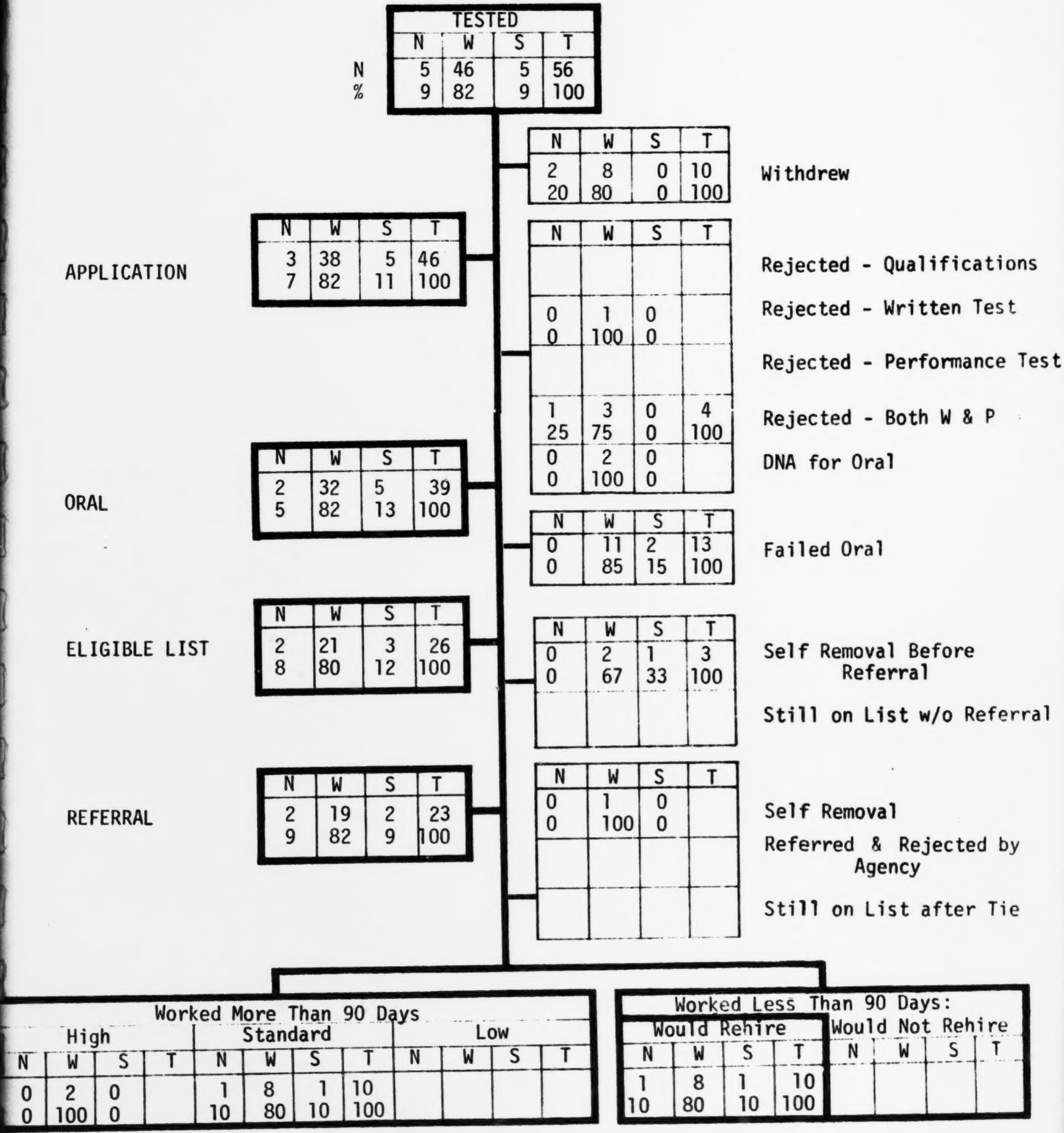
Selection Stage by Ethnic Group - Group Four

The attrition-survival of the three ethnic group members through the various selection stages is shown for the Resident Supervisor Trainee applicants in Graph 98. Here it can be noted that the percentages of ethnic subgroups referred are identical with the percentages of ethnic subgroups applying for this job. In general, the Spanish-surname personnel tended to be younger than the other two groups as indicated in Graph 99. Educational levels of the applicants tended to be comparable, however (Graph 100).

In contrast to the situation involving hospital attendants, the three ethnic groups were more comparable to each other on the low verbal tests as shown in Graphs 101 through 105. Applicants for the resident supervisor trainee job also scored higher on the same tests. This reflects the tendency of the higher level jobs to attract applicants who are better educated and who score higher on tests, even though they are in the same general age group.

Although the differences are not significant, it is interesting to note that Negro and Spanish-surname applicants were given higher oral interview ratings than White applicants as shown in Graph 107. These ratings tend to correlate with the superior salary on last job and length of time on last job for the Negroes as reflected in Graphs 110 and 111.

Overall, the applicants for the resident supervisor trainee position, particularly the minority group applicants, tended to score higher than applicants for hospital attendant. This emphasized the uniqueness of the labor supply for each job.



TESTED

	N	W	S	T
N	5	46	5	56
%	9	82	9	100

Withdrew

N	W	S	T
2	8	0	10
20	80	0	100

APPLICATION

N	W	S	T
3	38	5	46
7	82	11	100

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test	0 0	1 100	0 0	
Rejected - Performance Test				
Rejected - Both W & P	1 25	3 75	0 0	4 100
DNA for Oral	0 0	2 100	0 0	

ORAL

N	W	S	T
2	32	5	39
5	82	13	100

Failed Oral

N	W	S	T
0	11	2	13
0	85	15	100

ELIGIBLE LIST

N	W	S	T
2	21	3	26
8	80	12	100

	N	W	S	T
Self Removal Before Referral	0 0	2 67	1 33	3 100
Still on List w/o Referral				

REFERRAL

N	W	S	T
2	19	2	23
9	82	9	100

	N	W	S	T
Self Removal	0 0	1 100	0 0	
Referred & Rejected by Agency				
Still on List after Tie				

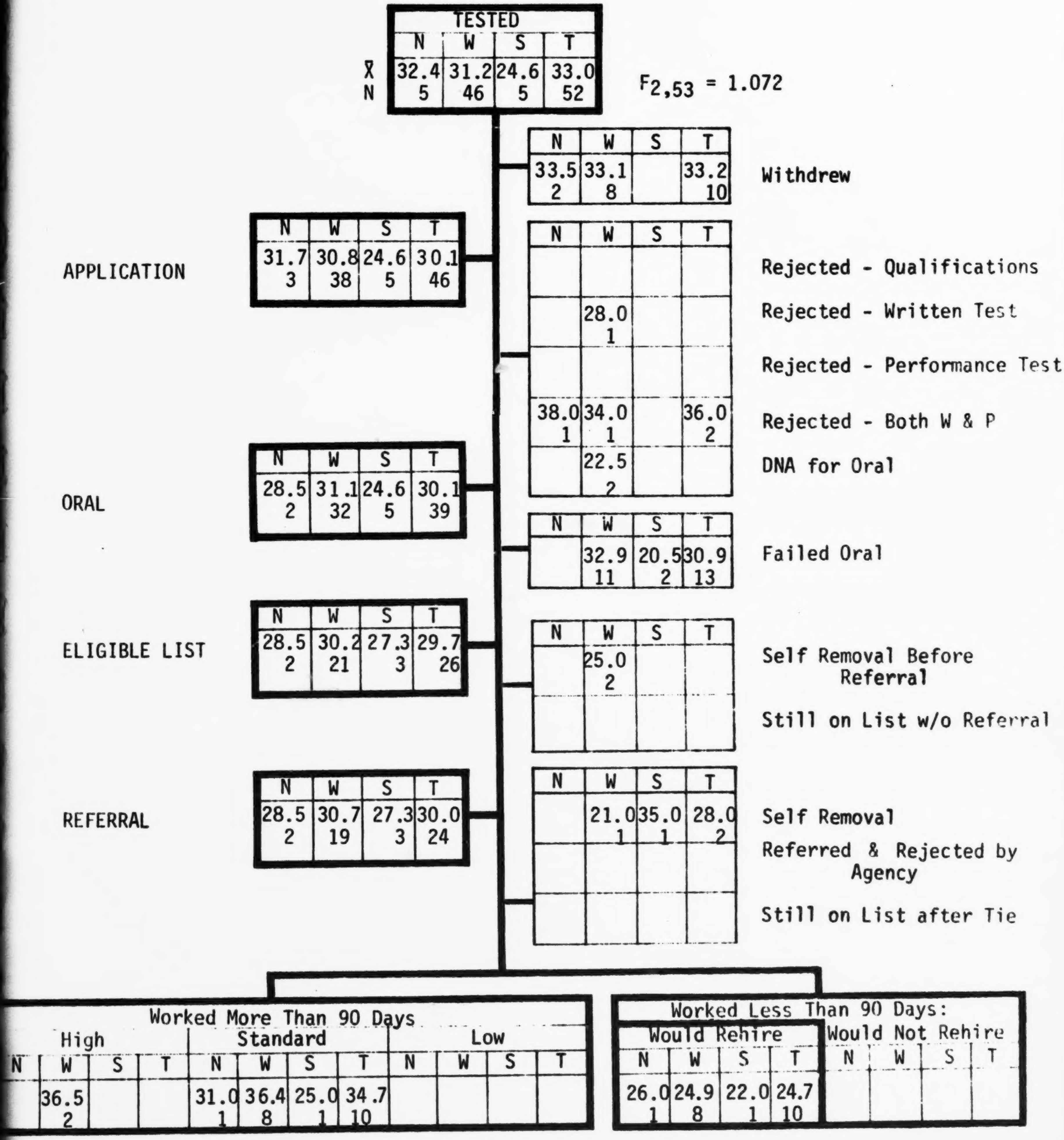
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	2	0		1	8	1	10				
0	100	0		10	80	10	100				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1	8	1	10				
10	80	10	100				

Graph 98. Attrition-Survival by Selection Stage and Ethnic Group - Group Four



TESTED

	N	W	S	T
X̄	32.4	31.2	24.6	33.0
N	5	46	5	52

$F_{2,53} = 1.072$

Withdrew	N	W	S	T
	33.5 2	33.1 8		33.2 10

APPLICATION

N	W	S	T
31.7 3	30.8 38	24.6 5	30.1 46

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		28.0 1		
Rejected - Performance Test				
Rejected - Both W & P	38.0 1	34.0 1		36.0 2
DNA for Oral		22.5 2		

ORAL

N	W	S	T
28.5 2	31.1 32	24.6 5	30.1 39

	N	W	S	T
Failed Oral		32.9 11	20.5 2	30.9 13

ELIGIBLE LIST

N	W	S	T
28.5 2	30.2 21	27.3 3	29.7 26

	N	W	S	T
Self Removal Before Referral		25.0 2		
Still on List w/o Referral				

REFERRAL

N	W	S	T
28.5 2	30.7 19	27.3 3	30.0 24

	N	W	S	T
Self Removal		21.0 1	35.0 1	28.0 2
Referred & Rejected by Agency				
Still on List after Tie				

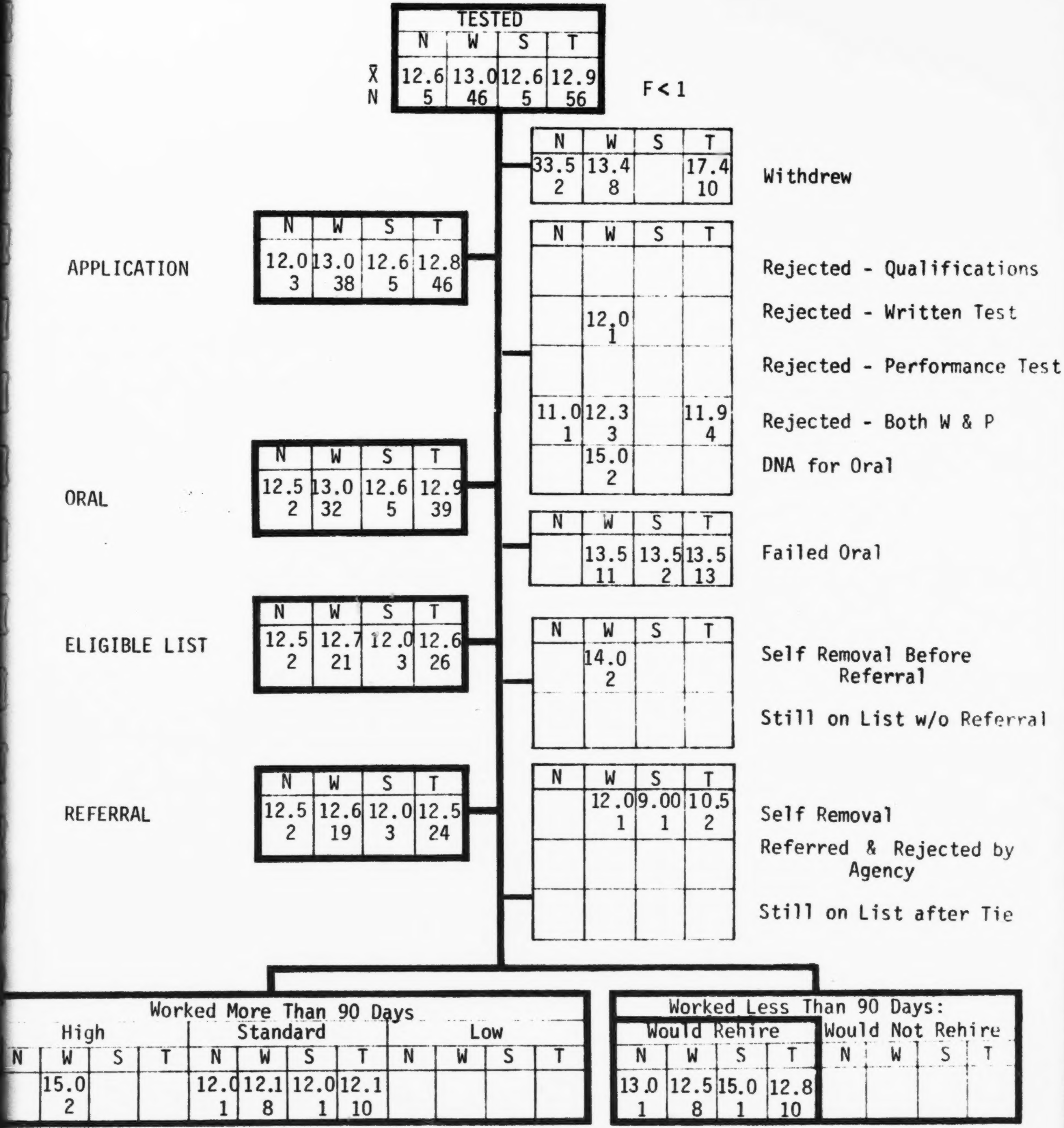
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	36.5 2			31.0 1	36.4 8	25.0 1	34.7 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
26.0 1	24.9 8	22.0 1	24.7 10				

Graph 99. Age by Selection Stage and Ethnic Group - Group Four



F < 1

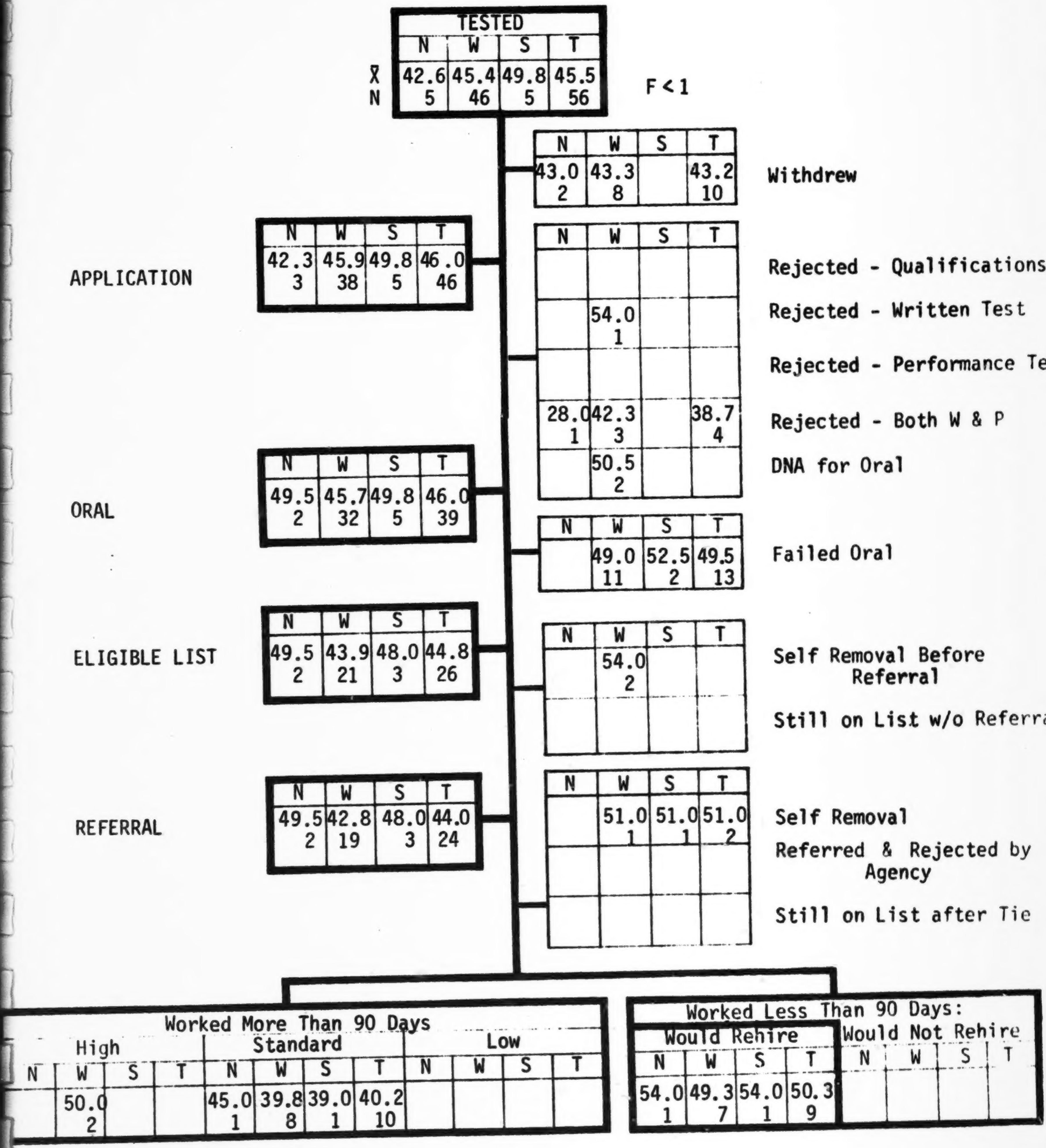
	N	W	S	T
TESTED X̄ N	12.6 5	13.0 46	12.6 5	12.9 56
APPLICATION	12.0 3	13.0 38	12.6 5	12.8 46
ORAL	12.5 2	13.0 32	12.6 5	12.9 39
ELIGIBLE LIST	12.5 2	12.7 21	12.0 3	12.6 26
REFERRAL	12.5 2	12.6 19	12.0 3	12.5 24

	N	W	S	T
Withdrew	33.5 2	13.4 8		17.4 10
Rejected - Qualifications				
Rejected - Written Test		12.0 1		
Rejected - Performance Test				
Rejected - Both W & P	11.0 1	12.3 3		11.9 4
DNA for Oral		15.0 2		
Failed Oral		13.5 11	13.5 2	13.5 13
Self Removal Before Referral		14.0 2		
Still on List w/o Referral				
Self Removal		12.0 1	9.00 1	10.5 2
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	15.0 2			12.0 1	12.1 8	12.0 1	12.1 10				

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
13.0 1	12.5 8	15.0 1	12.8 10				

Graph 100. Education by Selection Stage and Ethnic Group - Group Four



TESTED

F < 1

	N	W	S	T
X̄	42.6	45.4	49.8	45.5
N	5	46	5	56

	N	W	S	T
Withdrew	43.0 2	43.3 8		43.2 10

APPLICATION

N	W	S	T
42.3 3	45.9 38	49.8 5	46.0 46

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		54.0 1		
Rejected - Performance Test				
Rejected - Both W & P	28.0 1	42.3 3		38.7 4
DNA for Oral		50.5 2		

ORAL

N	W	S	T
49.5 2	45.7 32	49.8 5	46.0 39

	N	W	S	T
Failed Oral		49.0 11	52.5 2	49.5 13

ELIGIBLE LIST

N	W	S	T
49.5 2	43.9 21	48.0 3	44.8 26

	N	W	S	T
Self Removal Before Referral		54.0 2		
Still on List w/o Referral				

REFERRAL

N	W	S	T
49.5 2	42.8 19	48.0 3	44.0 24

	N	W	S	T
Self Removal		51.0 1	51.0 1	51.0 2
Referred & Rejected by Agency				
Still on List after Tie				

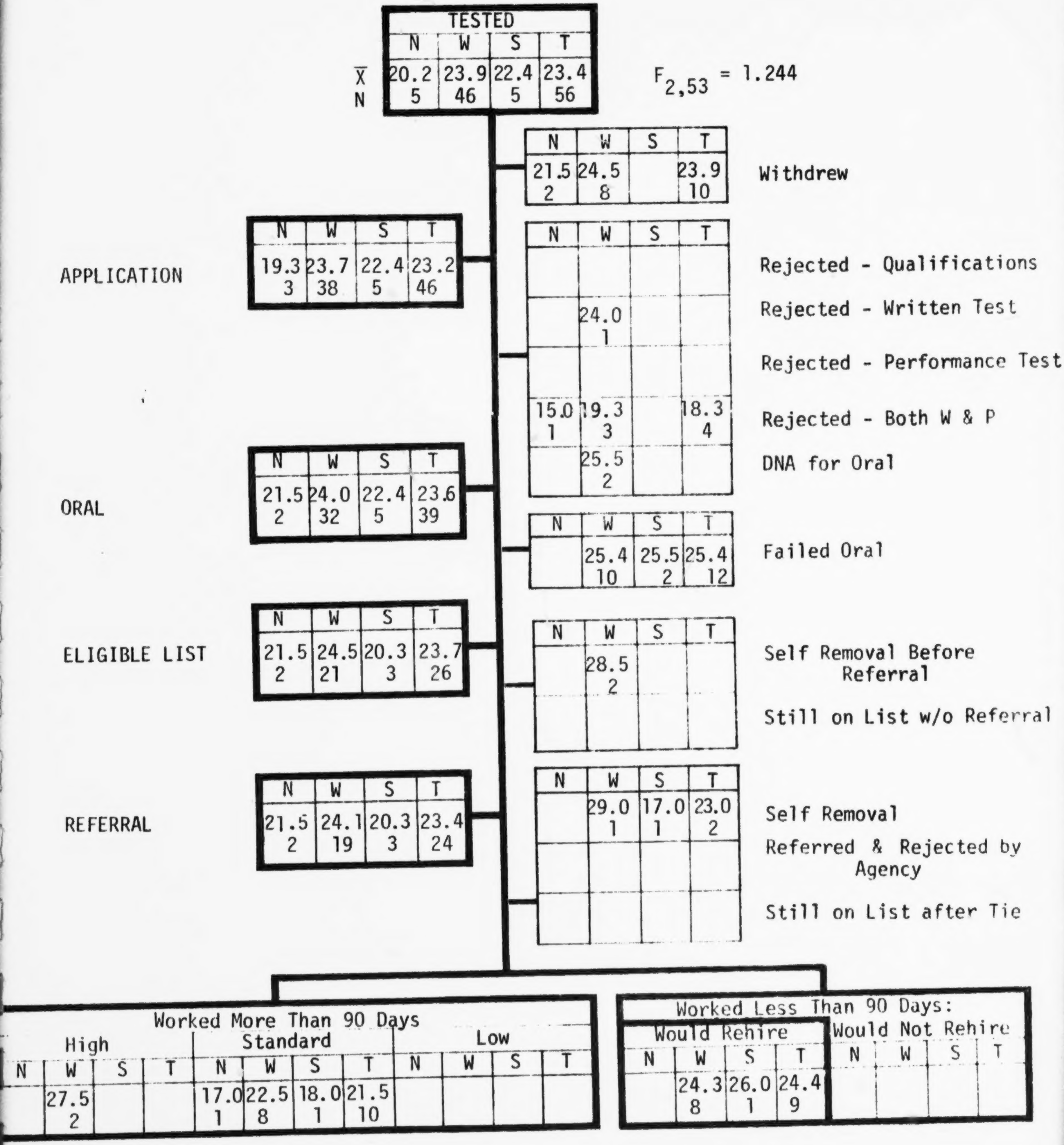
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	50.0 2			45.0 1	39.8 8	39.0 1	40.2 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
54.0 1	49.3 7	54.0 1	50.3 9				

Graph 101. X-O Score by Selection Stage and Ethnic Group - Group Four



TESTED

	N	W	S	T
$\overline{X}$	20.2	23.9	22.4	23.4
N	5	46	5	56

$F_{2,53} = 1.244$

	N	W	S	T
Withdrew	21.5 2	24.5 8		23.9 10

APPLICATION

N	W	S	T
19.3 3	23.7 38	22.4 5	23.2 46

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		24.0 1		
Rejected - Performance Test				
Rejected - Both W & P	15.0 1	19.3 3		18.3 4
DNA for Oral		25.5 2		

ORAL

N	W	S	T
21.5 2	24.0 32	22.4 5	23.6 39

	N	W	S	T
Failed Oral		25.4 10	25.5 2	25.4 12

ELIGIBLE LIST

N	W	S	T
21.5 2	24.5 21	20.3 3	23.7 26

	N	W	S	T
Self Removal Before Referral		28.5 2		
Still on List w/o Referral				

REFERRAL

N	W	S	T
21.5 2	24.1 19	20.3 3	23.4 24

	N	W	S	T
Self Removal		29.0 1	17.0 1	23.0 2
Referred & Rejected by Agency				
Still on List after Tie				

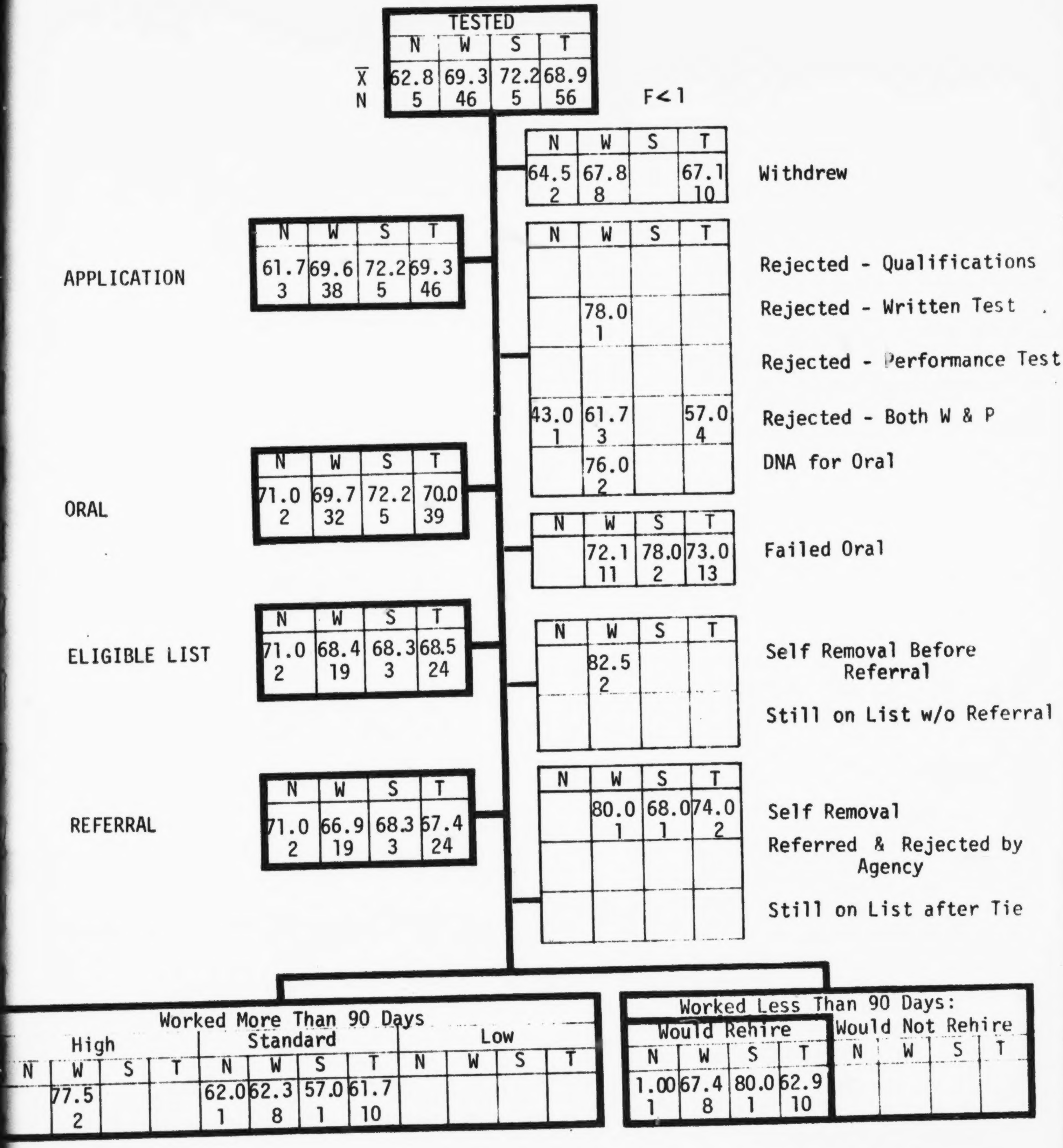
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	27.5 2			17.0 1	22.5 8	18.0 1	21.5 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	24.3 8	26.0 1	24.4 9				

Graph 102. $-¢ Score by Selection Stage and Ethnic Group - Group Four



TESTED

	N	W	S	T
$\overline{X}$	62.8	69.3	72.2	68.9
N	5	46	5	56

F<1

	N	W	S	T
Withdrew	64.5 2	67.8 8		67.1 10

APPLICATION

N	W	S	T
61.7	69.6	72.2	69.3
3	38	5	46

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test		78.0 1		
Rejected - Performance Test				
Rejected - Both W & P	43.0 1	61.7 3		57.0 4
DNA for Oral		76.0 2		

ORAL

N	W	S	T
71.0	69.7	72.2	70.0
2	32	5	39

	N	W	S	T
Failed Oral		72.1 11	78.0 2	73.0 13

ELIGIBLE LIST

N	W	S	T
71.0	68.4	68.3	68.5
2	19	3	24

	N	W	S	T
Self Removal Before Referral		82.5 2		
Still on List w/o Referral				

REFERRAL

N	W	S	T
71.0	66.9	68.3	67.4
2	19	3	24

	N	W	S	T
Self Removal		80.0 1	68.0 1	74.0 2
Referred & Rejected by Agency				
Still on List after Tie				

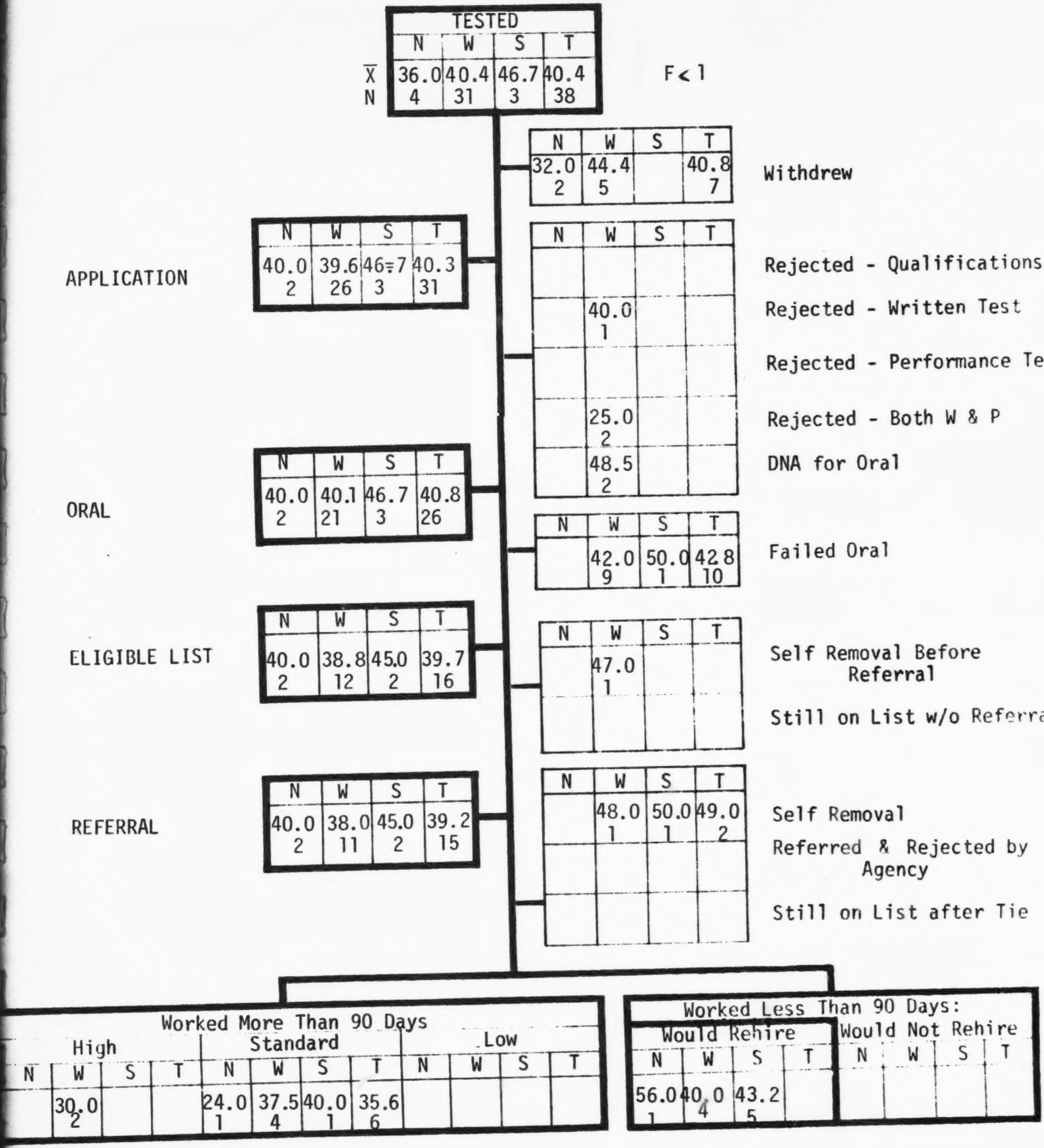
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	77.5 2			62.0 1	62.3 8	57.0 1	61.7 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1.00 1	67.4 8	80.0 1	62.9 10				

Graph 103. X-0 \$-¢ Score by Selection Stage and Ethnic Group - Group Four



TESTED	N	W	S	T
$\overline{X}$	36.0	40.4	46.7	40.4
N	4	31	3	38

F< 1

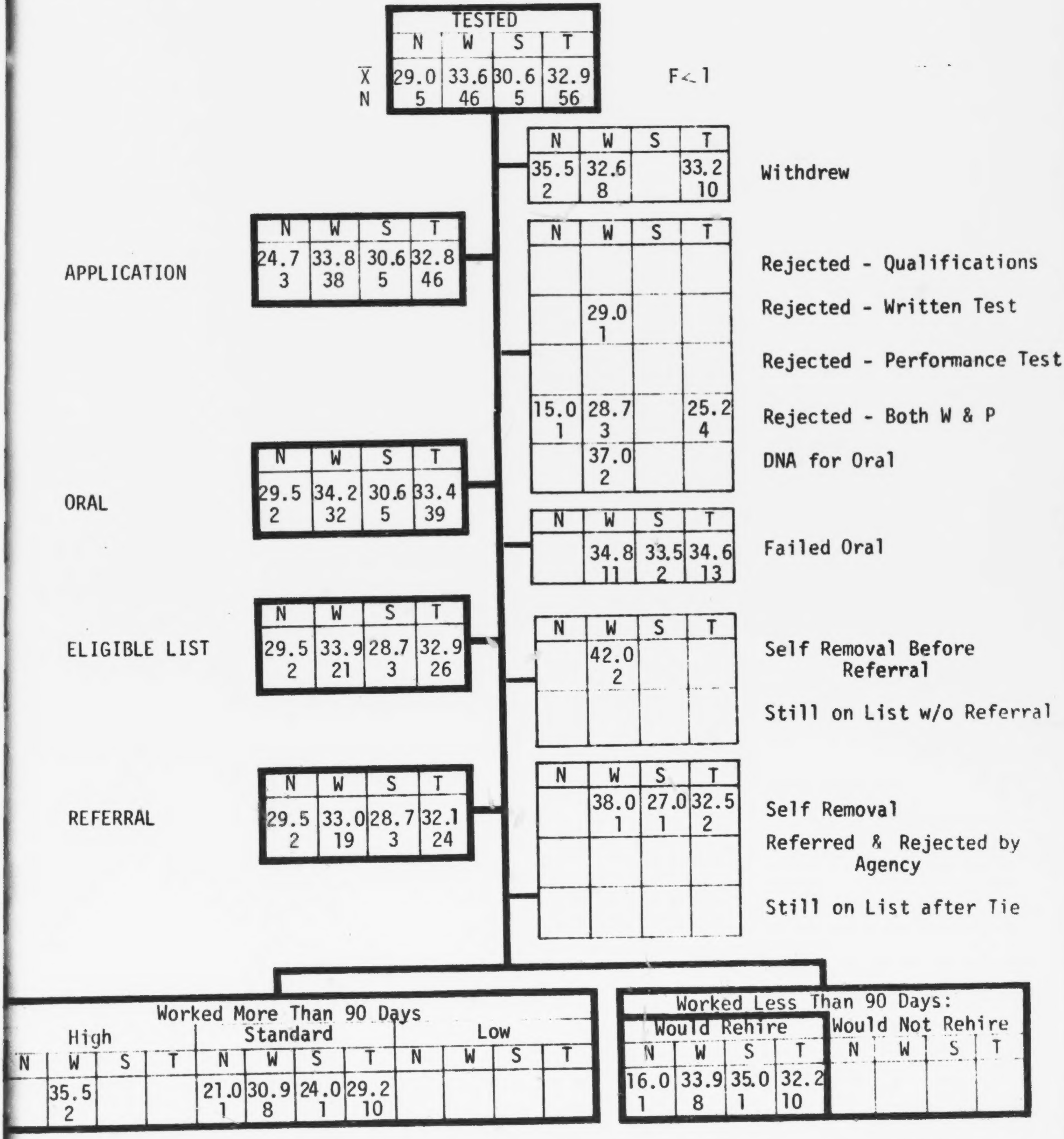
	N	W	S	T
APPLICATION	40.0 2	39.6 26	46.7 3	40.3 31
ORAL	40.0 2	40.1 21	46.7 3	40.8 26
ELIGIBLE LIST	40.0 2	38.8 12	45.0 2	39.7 16
REFERRAL	40.0 2	38.0 11	45.0 2	39.2 15

	N	W	S	T
Withdrew	32.0 2	44.4 5		40.8 7
Rejected - Qualifications				
Rejected - Written Test		40.0 1		
Rejected - Performance Test				
Rejected - Both W & P		25.0 2		
DNA for Oral		48.5 2		
Failed Oral		42.0 9	50.0 1	42.8 10
Self Removal Before Referral		47.0 1		
Still on List w/o Referral				
Self Removal		48.0 1	50.0 1	49.0 2
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	30.0 2			24.0 1	37.5 4	40.0 1	35.6 6				

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
56.0 1	40.0 4	43.2 5					

Graph 104. Visual Memory Score by Selection Stage and Ethnic Group - Group Four



F<1

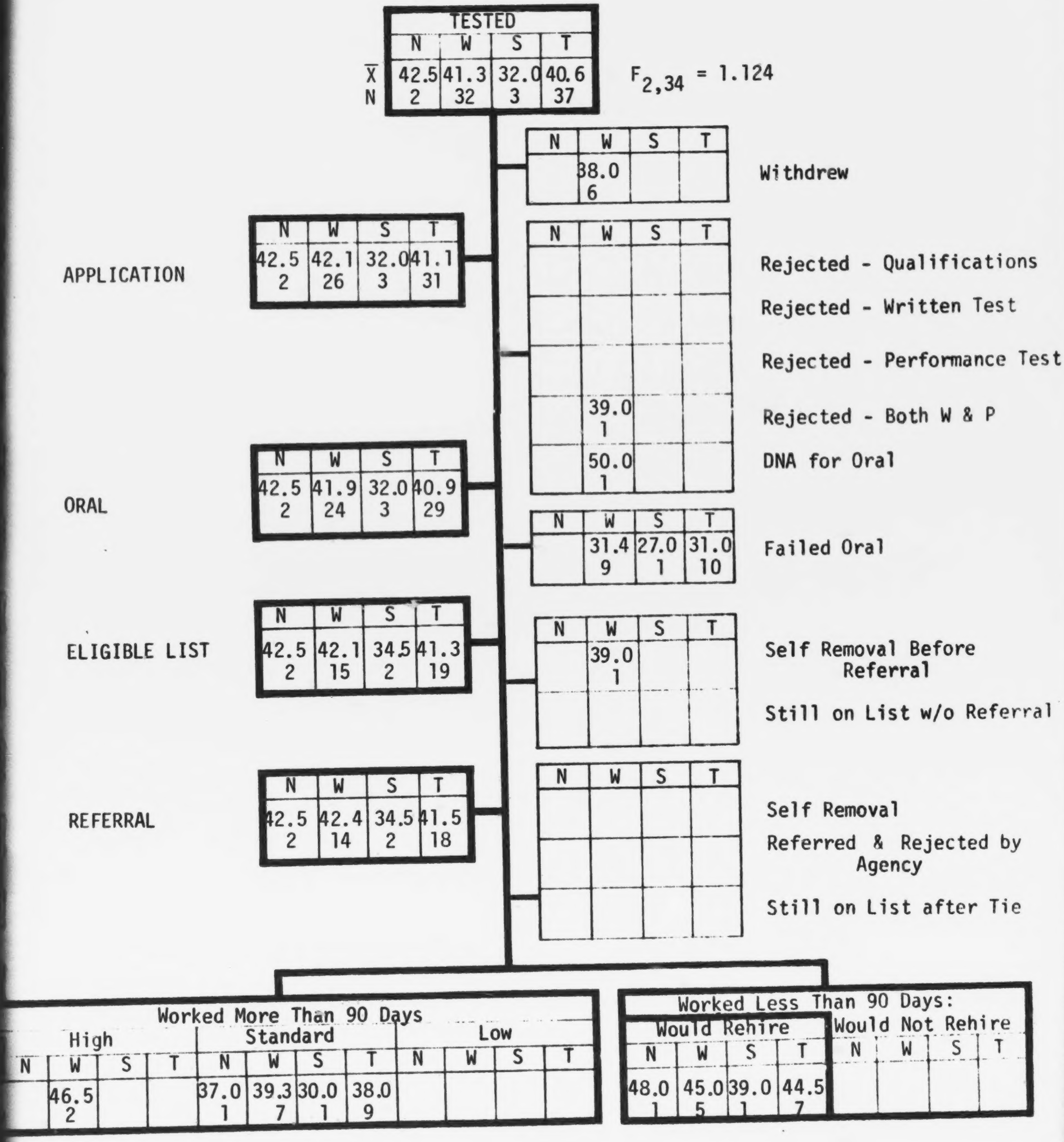
TESTED		N	W	S	T
	X̄	29.0	33.6	30.6	32.9
	N	5	46	5	56
APPLICATION		24.7	33.8	30.6	32.8
		3	38	5	46
ORAL		29.5	34.2	30.6	33.4
		2	32	5	39
ELIGIBLE LIST		29.5	33.9	28.7	32.9
		2	21	3	26
REFERRAL		29.5	33.0	28.7	32.1
		2	19	3	24

	N	W	S	T
Withdrew	35.5 2	32.6 8		33.2 10
Rejected - Qualifications				
Rejected - Written Test		29.0 1		
Rejected - Performance Test				
Rejected - Both W & P	15.0 1	28.7 3		25.2 4
DNA for Oral		37.0 2		
Failed Oral		34.8 11	33.5 2	34.6 13
Self Removal Before Referral		42.0 2		
Still on List w/o Referral				
Self Removal		38.0 1	27.0 1	32.5 2
Referred & Rejected by Agency				
Still on List after Tie				

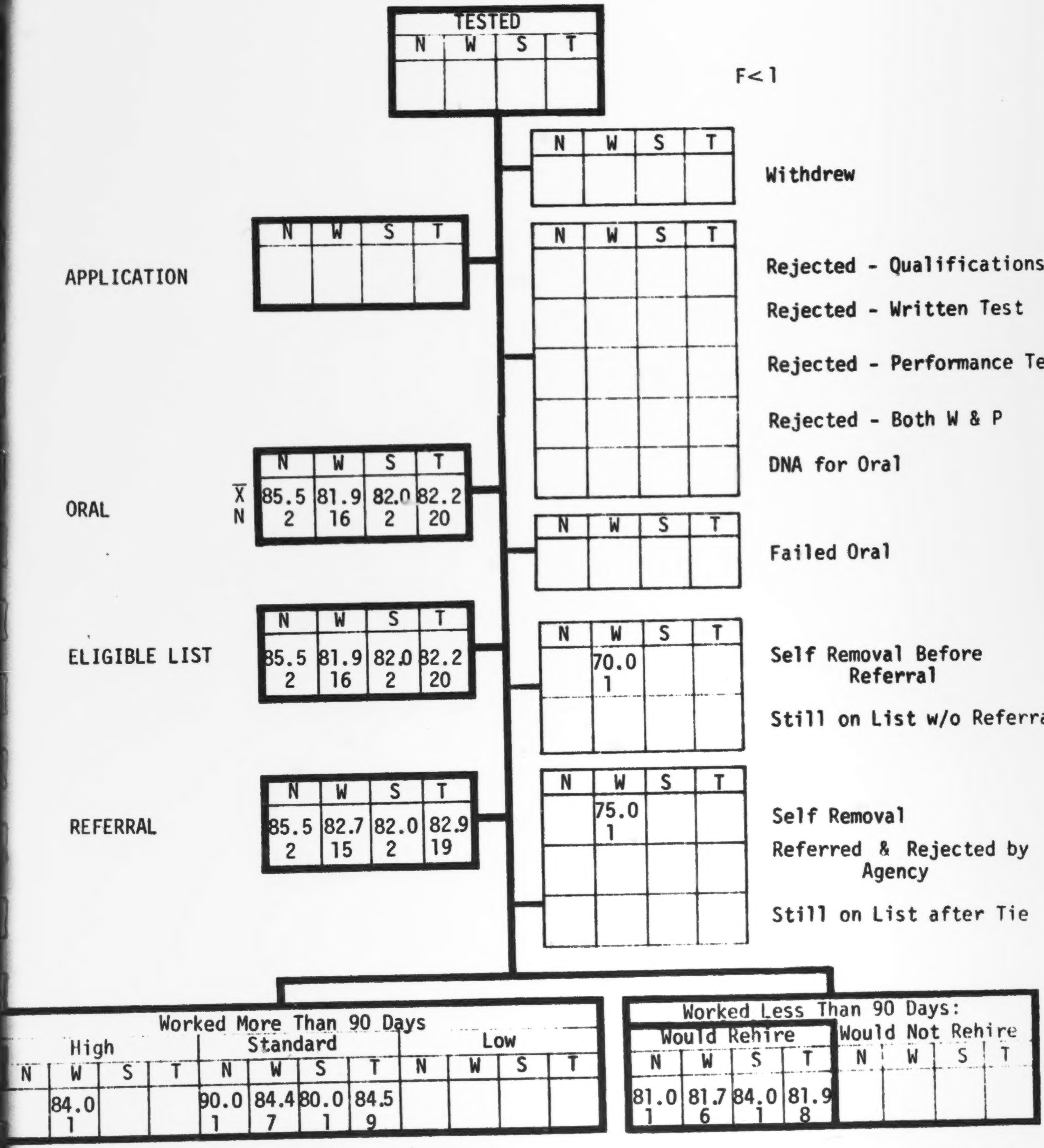
Worked More Than 90 Days: High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	35.5 2			21.0 1	30.9 8	24.0 1	29.2 10				

Worked Less Than 90 Days: Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
16.0 1	33.9 8	35.0 1	32.2 10				

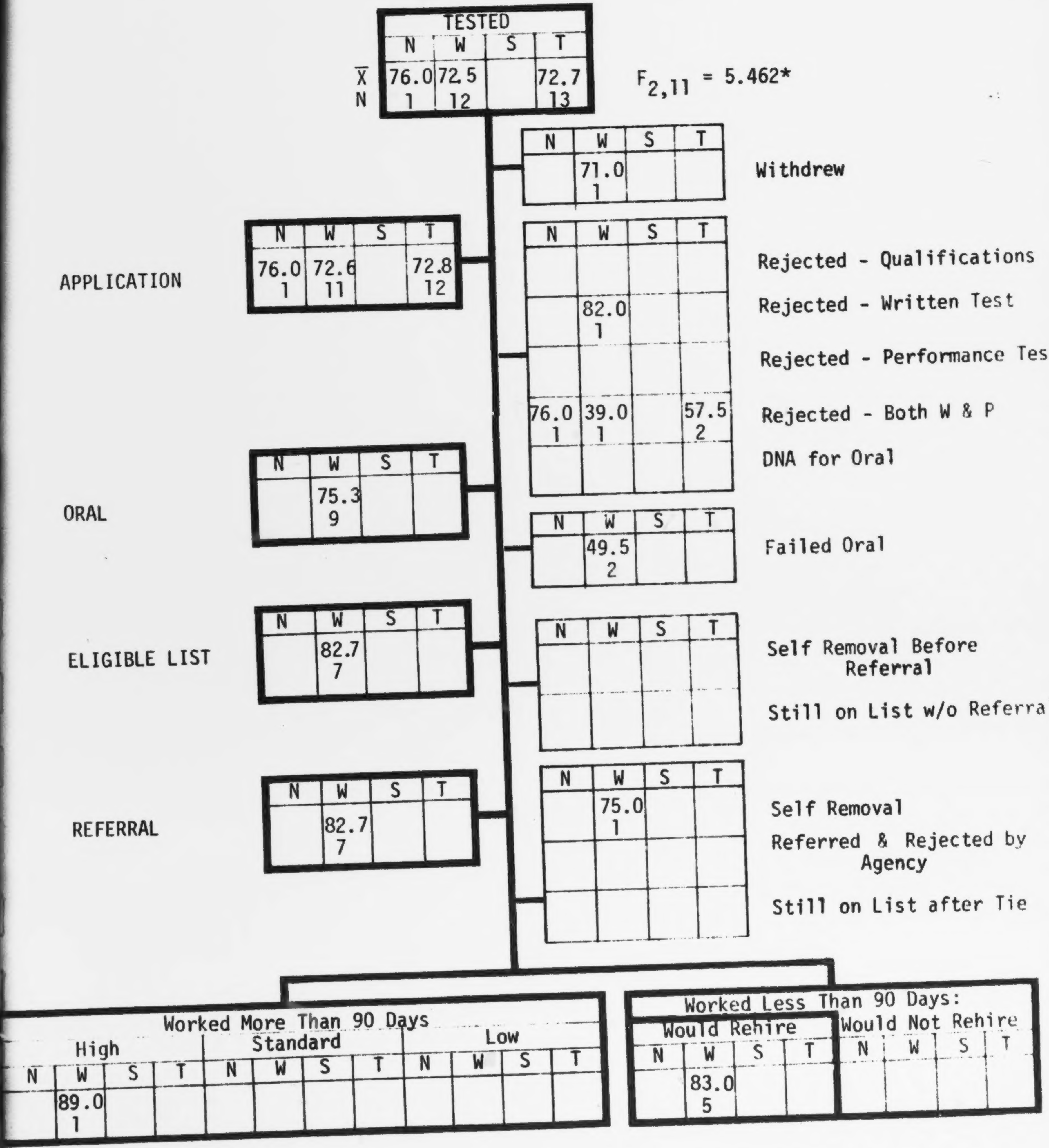
Graph 105. Matrices Score by Selection Stage and Ethnic Group - Group Four


TESTED
N W S T
X̄ 42.5 41.3 32.0 40.6
N 2 32 3 37
$F_{2,34}$ = 1.124
N W S T
38.0 6
Withdrew
APPLICATION
N W S T
42.5 2 | 42.1 26 | 32.0 3 | 41.1 31
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
39.0 1
DNA for Oral
50.0 1
ORAL
N W S T
42.5 2 | 41.9 24 | 32.0 3 | 40.9 29
N W S T
31.4 9 | 27.0 1 | 31.0 10
Failed Oral
ELIGIBLE LIST
N W S T
42.5 2 | 42.1 15 | 34.5 2 | 41.3 19
N W S T
39.0 1
Self Removal Before Referral
Still on List w/o Referral
REFERRAL
N W S T
42.5 2 | 42.4 14 | 34.5 2 | 41.5 18
N W S T
Self Removal
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
46.5 2
Standard
N W S T
37.0 1 | 39.3 7 | 30.0 1 | 38.0 9
Low
N W S T
Worked Less Than 90 Days:
Would Rehire
N W S T
48.0 1 | 45.0 5 | 39.0 1 | 44.5 7
Would Not Rehire
N W S T

Graph 106. Written Score by Selection Stage and Ethnic Group - Group Four


TESTED
N W S T
F<1
Withdrew
N W S T
APPLICATION
N W S T
Rejected - Qualifications
Rejected - Written Test
Rejected - Performance Test
Rejected - Both W & P
DNA for Oral
ORAL
X̄ N
N 85.5 2
W 81.9 16
S 82.0 2
T 82.2 20
Failed Oral
ELIGIBLE LIST
N 85.5 2
W 81.9 16
S 82.0 2
T 82.2 20
Self Removal Before Referral
W 70.0 1
Still on List w/o Referral
REFERRAL
N 85.5 2
W 82.7 15
S 82.0 2
T 82.9 19
Self Removal
W 75.0 1
Referred & Rejected by Agency
Still on List after Tie
Worked More Than 90 Days
High
N W S T
W 84.0 1
Standard
N 90.0 1
W 84.4 7
S 80.0 1
T 84.5 9
Low
N W S T
Worked Less Than 90 Days:
Would Rehire
N 81.0 1
W 81.7 6
S 84.0 1
T 81.9 8
Would Not Rehire
N W S T

Graph 107. Oral Rating by Selection Stage and Ethnic Group - Group Four



$F_{2,11}$ = 5.462*

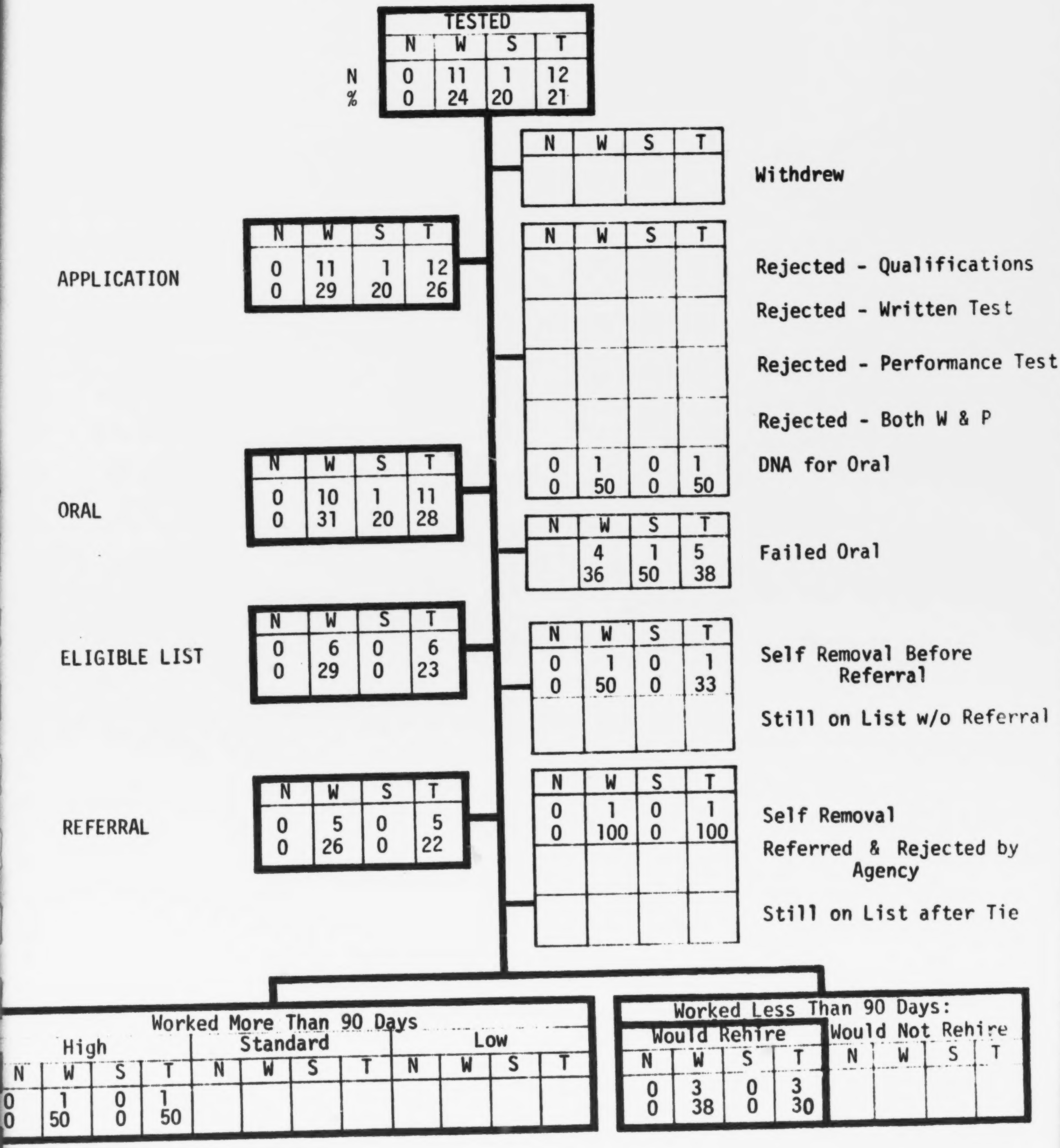
		N	W	S	T
TESTED	$\overline{X}$	76.0	72.5		72.7
	N	1	12		13
Withdrew			71.0 1		
APPLICATION		76.0 1	72.6 11		72.8 12
Rejected - Qualifications					
Rejected - Written Test			82.0 1		
Rejected - Performance Test					
Rejected - Both W & P		76.0 1	39.0 1		57.5 2
DNA for Oral					
ORAL			75.3 9		
Failed Oral			49.5 2		
ELIGIBLE LIST			82.7 7		
Self Removal Before Referral					
Still on List w/o Referral					
REFERRAL			82.7 7		
Self Removal			75.0 1		
Referred & Rejected by Agency					
Still on List after Tie					

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	89.0 1										

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
	83.0 5						

Graph 108. Total Rounded Score by Selection Stage and Ethnic Group - Group Four

*Significant at the .05 level or beyond



TESTED

	N	W	S	T
N	0	11	1	12
%	0	24	20	21

Withdrew

N	W	S	T

APPLICATION

N	W	S	T
0	11	1	12
0	29	20	26

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test				
Rejected - Both W & P				
DNA for Oral	0 0	1 50	0 0	1 50

ORAL

N	W	S	T
0	10	1	11
0	31	20	28

Failed Oral

N	W	S	T
	4	1	5
	36	50	38

ELIGIBLE LIST

N	W	S	T
0	6	0	6
0	29	0	23

	N	W	S	T
Self Removal Before Referral	0 0	1 50	0 0	1 33
Still on List w/o Referral				

REFERRAL

N	W	S	T
0	5	0	5
0	26	0	22

	N	W	S	T
Self Removal	0 0	1 100	0 0	1 100
Referred & Rejected by Agency				
Still on List after Tie				

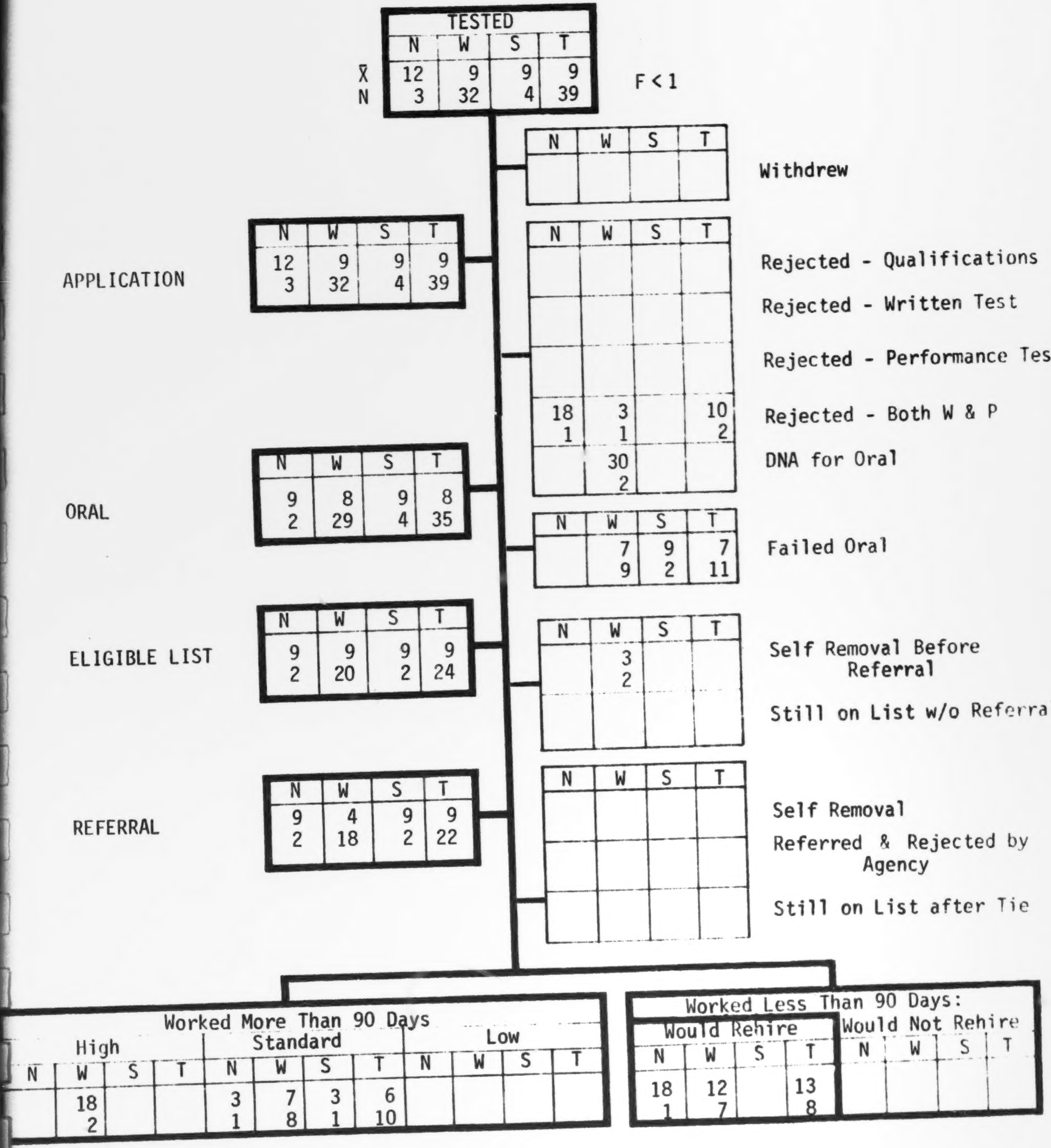
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	1	0	1								
0	50	0	50								

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
0	3	0	3				
0	38	0	30				

Graph 109. Marital Status (Yes) by Selection Stage and Ethnic Group - Group Four



TESTED

	N	W	S	T
$\bar{X}$	12	9	9	9
N	3	32	4	39

F < 1

Withdrew

N	W	S	T

APPLICATION

N	W	S	T
12 3	9 32	9 4	9 39

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test				
Rejected - Both W & P	18 1	3 1		10 2
DNA for Oral		30 2		

ORAL

N	W	S	T
9 2	8 29	9 4	8 35

	N	W	S	T
Failed Oral		7 9	9 2	7 11

ELIGIBLE LIST

N	W	S	T
9 2	9 20	9 2	9 24

	N	W	S	T
Self Removal Before Referral		3 2		
Still on List w/o Referral				

REFERRAL

N	W	S	T
9 2	4 18	9 2	9 22

	N	W	S	T
Self Removal				
Referred & Rejected by Agency				
Still on List after Tie				

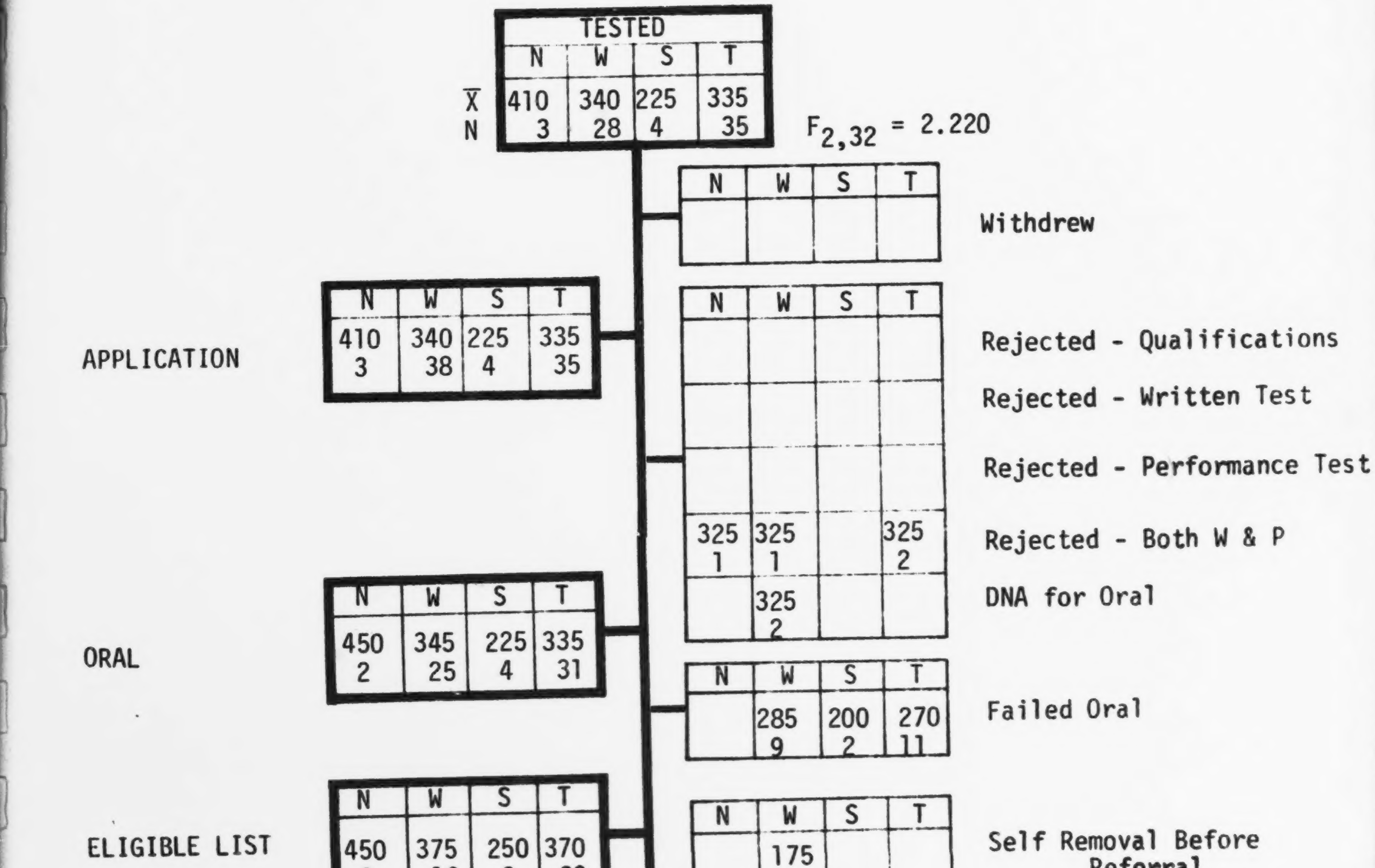
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	18 2			3 1	7 8	3 1	6 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
18 1	12 7		13 8				

Graph 110. Length of Last Employment by Selection Stage and Ethnic Group - Group Four



TESTED

	N	W	S	T
$\overline{X}$	410	340	225	335
N	3	28	4	35

$F_{2,32} = 2.220$

Withdrew

N	W	S	T

APPLICATION

N	W	S	T
410 3	340 38	225 4	335 35

	N	W	S	T
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test				
Rejected - Both W & P	325 1	325 1		325 2
DNA for Oral		325 2		

ORAL

N	W	S	T
450 2	345 25	225 4	335 31

	N	W	S	T
Failed Oral		285 9	200 2	270 11

ELIGIBLE LIST

N	W	S	T
450 2	375 16	250 2	370 20

	N	W	S	T
Self Removal Before Referral		175 1		
Still on List w/o Referral				

REFERRAL

N	W	S	T
450 2	390 15	250 2	380 19

	N	W	S	T
Self Removal		125 1	375 1	250 2
Referred & Rejected by Agency				
Still on List after Tie				

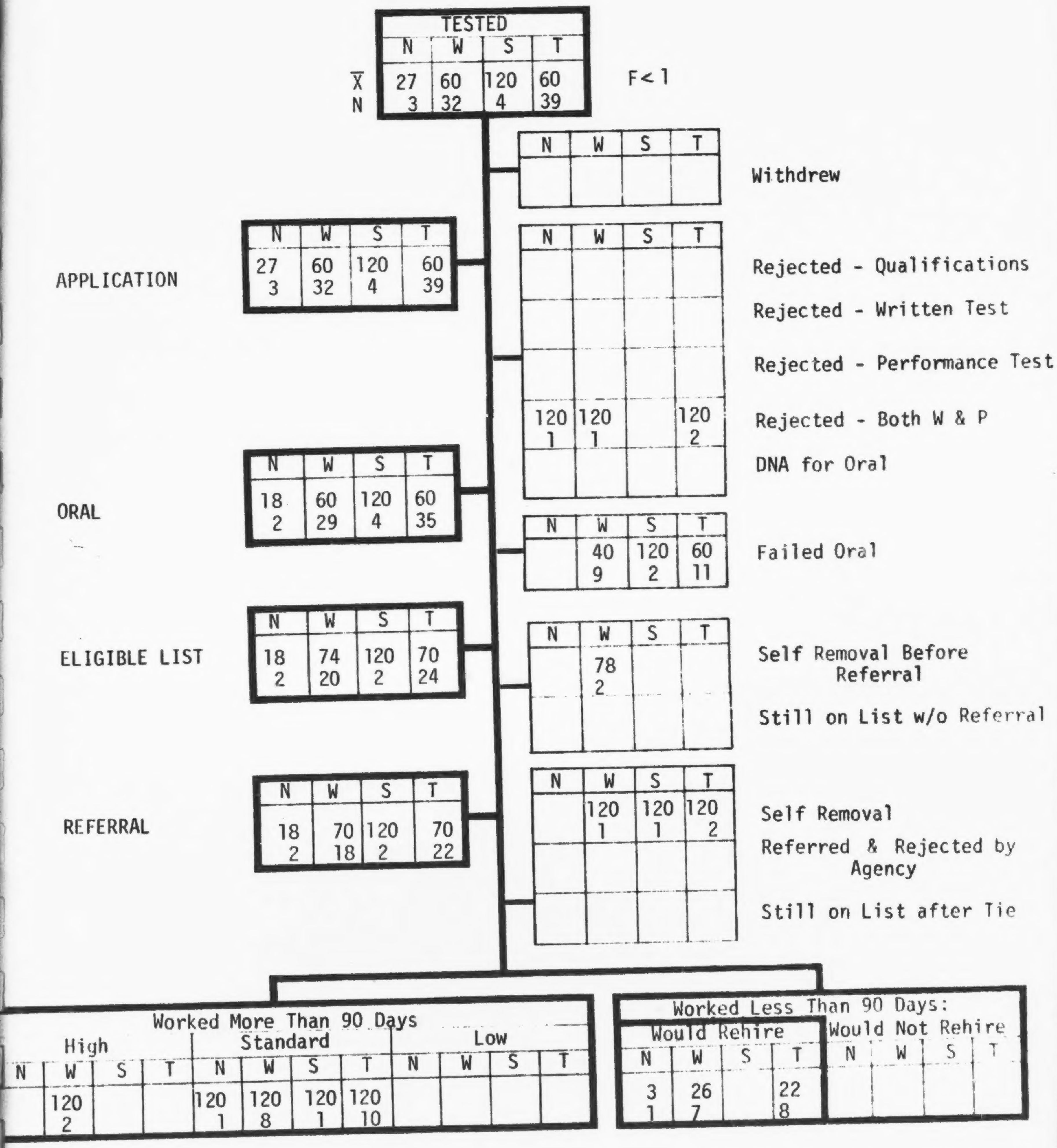
Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	325 2			425 1	430 8	125 1	400 10				

Worked Less Than 90 Days:

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
475 1	400 4		415 5				

Graph 111. Salary at Last Employment by Selection Stage and Ethnic Group - Group Four



TESTED	N	W	S	T
$\overline{X}$	27	60	120	60
N	3	32	4	39

F< 1

	N	W	S	T
APPLICATION	27 3	60 32	120 4	60 39
ORAL	18 2	60 29	120 4	60 35
ELIGIBLE LIST	18 2	74 20	120 2	70 24
REFERRAL	18 2	70 18	120 2	70 22

	N	W	S	T
Withdrew				
Rejected - Qualifications				
Rejected - Written Test				
Rejected - Performance Test				
Rejected - Both W & P	120 1	120 1		120 2
DNA for Oral				
Failed Oral		40 9	120 2	60 11
Self Removal Before Referral		78 2		
Still on List w/o Referral				
Self Removal		120 1	120 1	120 2
Referred & Rejected by Agency				
Still on List after Tie				

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
	120 2			120 1	120 8	120 1	120 10				

Worked Less Than 90 Days:							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
3 1	26 7		22 8				

Graph 112. Length of Residence in Colorado by Selection Stage and Ethnic Group-Group Four

Performance of Employed Personnel

To assess the differences in performance among employed personnel in the four job groups in the State Civil Service, supervisors completed a four-part rating of performance for 94 individuals. Of these, 48 were in Group One jobs, 13 in Group Two, 15 in Group Three and 18 in Group Four. The mean ratings assigned to the employed personnel in the four groups classified by ethnic group membership are shown in Table 16. Inspection of this table reveals that the differences among the ethnic groups within job groupings were not significant. Although the numbers are so small as to prohibit meaningful generalization, it is interesting to note that the five Spanish-surname clerical employees received slightly more ratings of 5.00 or above than the other two groups.

Coefficients of Correlation Between Predictors and Job Performance.

To understand the relationship between the test scores and other prediction variables involved in the present project and performance on the job for the State Civil Service employed personnel, coefficients of correlation were computed between each predictor and each of the four job performance ratings. These coefficients of correlation are shown in Tables 17 through 20. Unfortunately, the number of minority group personnel employed did not permit comparison of predictors and performance within ethnic groups.

From Table 17 it can be noted that considerable variation in predictive effectiveness was reflected among the prediction variables and performance for the Intermediate Clerk Typist group. Since the significance of the coefficients is a function of sample size, many of the larger coefficients (based on a small number of cases) are not significantly different from zero. Further, in several instances, the direction of the relationship is negative.

It will be recalled that the low verbal tests were not used in making selection decisions, hence these data are less contaminated than those for the other tests. The X-O $-¢, Visual Memory and Matrices all offer some evidence of validity for use with applicants from this group. The presently used "Written" test did not correlate well with performance for this group, although the oral rating did show some validity.

The small number of cases tested in Group Two make generalization from Table 18 relatively unmeaningful. It would appear, however, that in contrast to some evidence of predictive effectiveness in Group One the oral rating was not effective for Group Two with this sample.

In Table 19 are shown the results from the predictor analyses for Group Three employed personnel. This group did not take the low verbal series. As with the other two groups, evidence of the validity of the predictors is limited. It should be emphasized, however, that the use of the tests in the selection decision undoubtedly contributed to the low coefficients.

In Table 20 are shown the coefficients between various predictors and the job performance of the Resident Supervisor Trainees involved in the project. From this table, it can be noted that the prediction variables were uniformly ineffective in predicting success on the job. Apparently the labor market and the nature of the job make the use of tests for selection purposes for this job quite unmeaningful.

Summary Statement

The proportion of minority group personnel employed for State Civil Service jobs in relation to the proportion applying for such jobs was found to be comparable. The absolute number of minority group personnel applying for (and being employed in) clerical jobs is very small, however. Attention to recruiting techniques to reach minority group members is recommended.

Although the small number of cases involved in this phase of the project prohibited meaningful generalizations, little evidence was found to indicate validity for many of the prediction devices used for selection purposes. It is recommended that a systematic and concerted effort be initiated to determine the effectiveness of present devices and to evaluate other devices which might prove to be valid.

Table 16

Performance of Employed Personnel by Job and Ethnic Group

Performance Category	F	Negro	White	Surname
		Job Group One		
Ability to Learn	1.567	3.50 (2)	4.86 (42)	5.50 (4)
Quantity of Work	000	5.00	5.00	5.00
Quality of Work	1.114	4.00	5.24	5.50
Knowledge of Work	1.565	3.50	4.60	4.00
		Job Group Two		
Ability to Learn	less than 1.00		4.17 (12)	5.00 (1)
Quantity of Work	less than 1.00		4.42	4.00
Quality of Work	less than 1.00		5.00	5.00
Knowledge of Work	less than 1.00		4.17	5.00
		Job Group Three		
Ability to Learn			5.07 (15)	
Quantity of Work			5.07	
Quality of Work			5.27	
Knowledge of Work			5.07	
		Job Group Four		
Ability to Learn	less than 1.00	4.00 (1)	3.87 (15)	4.00 (2)
Quantity of Work		3.00	3.93	3.00
Quality of Work		4.00	3.87	3.50
Knowledge of Work		4.00	4.00	4.50

Group One - Intermediate Clerk Typist
Group Two - Clerk Typist, Senior Clerk Typist, Dic. Mach. Operator
Group Three - Clerk Steno, Int. Clerk Steno, Senior Clerk Steno
Group Four - Resident Supervisor Trainee

Table 17

Coefficients of Correlation Between Predictor Variables and Four Ratings of Performance - Group One

Predictor Variable	N	Ability to Learn	Quantity of Work	Quality of Work	Knowledge of Work
Age	48	-.26*	-.19	-.21	-.03
Education	47	-.11	-.28*	-.08	.00
X-O Right	35	.08	.12	.30	.14
X-O Wrong	35	-.19	-.08	-.20	.33
$-¢ Right	35	.19	.19	.23	.22
$-¢ Wrong	35	-.24	-.32	-.17	-.10
X-O $-¢ Right	35	.18	.20	.32	.23
X-O $-¢ Wrong	35	.28	-.21	-.26	-.36*
Visual Memory Right	24	.38	.28	.30	.46*
Visual Memory Wrong	[illegible]	.23	.07	.20	.12
Matrices Right	[illegible]	.37*	.28	.44*	.47*
Matrices Wrong	[illegible]	.03	.10	.02	-.12
Book I A	14	-.06	-.18	-.18	-.12
Book I B	14	.19	-.29	-.54*	-.44
A & B Combined	14	-.12	-.25	-.36	-.28
A & B Weighted	12	-.20	-.32	.42	-.44
Book II A	28	-.10	-.24	-.03	-.01
Book II B	28	-.22	-.12	-.33	-.29
Total Raw Score	23	-.29	-.19	-.34	-.21
Converted Raw Score	23	.13	.15	.07	.18
Typing	44	.16	-.02	.04	.01
Written	44	.04	.00	.22	.05
Oral Rating	45	.20	.17	.31*	.16
Rounded Value	40	.12	.08	.03	-.05
Ability to Learn			.75*	.72*	.71*
Quantity of Work				.67*	.59*
Quality of Work					.78*

*Significant at .05 or above

Table 18

Coefficients of Correlation Between Predictor Variables and Four Ratings of Performance - Group Two

Predictor Variable	N	Ability to Learn	Quantity of Work	Quality of Work	Knowledge of Work
Age	14	-.55*	-.33	-.54*	-.57
Education	14	-.57*	-.54*	-.50	-.25
X-O Right	4	-.53	.05	.28	-.32
X-O Wrong	4	.69	.15	-.07	.26
$-¢ Right	4	.23	.77	.92	-.48
$-¢ Wrong	4	.41	-.30	-.49	.52
X-O $-¢ Right	4	-.34	.27	.49	-.39
X-O $-¢ Wrong	4	.60	.02	-.24	.37
Matrices Right	4	.84	.61	.72	.26
Matrices Wrong	4	-.51	.25	.10	-.92
Book I A	6	.19	.17	-.22	-.52
Book I B	6	.83*	.86*	.66	.28
A & B Combined	6	.70	.71	.36	-.08
A & B Weighted	6	.70	.71	.36	-.08
Book II A	10	.43	.22	.33	.20
Book II B	12	.07	.16	.05	-.19
Total Raw Score	12	.08	.14	.22	.23
Converted Raw Score	11	.47	.41	.26	.01
Typing	11	.28	.11	.23	.34
Written	12	.44	.45	.32	-.31
Oral Rating	12	-.67*	-.15	-.23	-.83*
Rounded Value	11	.44	.32	.16	.02
Ability to Learn	14		.73*	.73*	.82*
Quantity of Work	14			.89*	.44
Quality of Work	14				.55*

*Significant at .05 or above

Table 19

Coefficients of Correlation Between Predictor Variables and Four Ratings of Performance - Group Three

Predictor Variable	N	Ability to Learn	Quantity of Work	Quality of Work	Knowledge of Work
Age	15	-.01	..26	-.01	.33
Education	14	-.12	-.06	-.18	-.20
Book I A	5	-.76	-.87*	-.71	-.78
Book I B	5	.34	.05	.44	.39
A & B Combined	5	-.52	-.71	-.44	-.52
A & B Weighted	5	-.87*	-.85	-.86	-.87*
Book II A	14	.14	.08	.25	.07
Book II B	14	.33	.37	.52	.45
Book II C	10	-.41	-.31	-.42	-.39
Total Raw Score	14	.22	.17	.18	.25
Converted Raw Score	14	.21	-.02	.13	.00
Typing	14	.18	.44	.22	.43
Written	15	.20	-.01	.29	.01
Oral Rating	15	.24	.03	.33	.05
Rounded Value	14	.43	.14	.38	.25
Ability to Learn	15		.70*	.85*	.71*
Quantity of Work				.80*	.88*
Quality of Work					.81*

*Significant at .05 or above

Table 20

Coefficients of Correlation Between Predictor Variables and Four Ratings of Performance - Group Four

Predictor Variable	N	Ability to Learn	Quantity of Work	Quality of Work	Knowledge of Work
Age	17	.34	.10	.35	.19
X-0 Right	18	.08	.04	.07	.10
X-0 Wrong	18	.05	.07	.01	-.26
$-¢ Right	18	.10	.31	.10	.23
$-¢ Wrong	18	-.12	-.26	-.13	-.27
X-0 $-¢ Right	18	.10	.15	.09	.17
X-0 $-¢ Wrong	18	-.12	-.19	-.14	-.33
Visual Memory Right	18	-.37	-.39	-.42	-.26
Visual Memory Wrong	18	-.40	-.24	-.37	-.44
Matrices Right	18	.20	.14	.12	.12
Matrices Wrong	18	-.18	-.37	-.20	-.37
Length of Last Employment	17	-.22	-.18	-.18	.18
Salary of Last Employment	16	.06	-.09	-.07	-.41
Written	14	.17	.19	.14	.06
Oral Rating	13	.00	-.31	.01	-.36
Total Rounded	4	.72	.77	.72	.16
Ability to Learn	18		.73*	.95*	.82*
Quantity of Work	18			.82*	.69*
Quality of Work	18				.82*

*Significant at .05 or above

DISCUSSION

Specific conclusions have been reached and specific recommendations have been made throughout both phases of the present project. Rather than reiterating these specifics here, the findings will be integrated into the answers to the three broad questions to which the project was addressed. The questions and answers follow.

1. What differences in performance on selected jobs exist among three ethnic groups in Colorado?

In both the cross sectional phase of the project as well as the longitudinal phase, no evidence of differences in job performance among the three ethnic groups was found. This finding encompassed several jobs and several criteria of performance.

2. What differences in performance on selection devices exist among the three ethnic groups studied?

Although there were some exceptions and there was considerable overlapping of distributions, the mean scores of Negroes and Spanish-surname personnel were lower than the mean for Whites on the paper-and-pencil tests administered in the present project. Although the scores on low verbal materials tended to be more similar for the three groups than the scores for highly verbal materials, the differences still existed. Mean oral interview ratings, however, were much more comparable for the three groups studied.

3. What differential relationships exist between performance on selection devices and performance on the job when employees in selected jobs are classified according to three ethnic groups?

Evidence from both the cross sectional phase and the longitudinal phase of the present project indicates that the relationship between predictor variables and job performance varies from one ethnic group to another. Both the location of the specific job in the hierarchy and the composition of the local labor force influence these intr-subgroup relationships, however. The importance of the role which these two factors play in influencing the relationship between selection devices and job performance cannot be overemphasized.

Continuous research to assess (1) the requirements for success on the job, (2) the performance of subgroups of applicants on all selection devices used in employment, and (3) the composition of the labor force will be necessary to assure that selection devices are being used fairly. When this condition prevails the probability of employment parallels the probability of success on a job regardless of membership in any subgroup in the labor force.

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APPENDICES

CAREER SERVICE - CODE FOR SELECTION ANALYSIS . . . .

STATE CIVIL SERVICE - CODE FOR SELECTION ANALYSIS . . . .

Standard Deviations for Selected Characteristics of Tested and Hired Applicants by Ethnic Group - Hospital Attendant . . . .

Interview Areas One, Two, Three and Four for Hospital Attendant Applicants . . . .

CAREER SERVICE - CODE FOR SELECTION ANALYSIS

Interval Size in ( )

Variable No.	
	Columns 1, 2 and 3 Employee I.D. Number 001 - 999
1	Columns 4 and 5 (03) Age 01-99
2	Column 6 Ethnic Group 1 - White 2 - Negro 3 - Spanish
3	Columns 7 and 8 (01) Education - Number of years completed 01 - 99
4	Column 9 (01) Sex 1 - Male 2 - Female
5	Column 10 (01) Marital Status 1 - Single 2 - Married 3 - Divorced 4 - Separated 5 - Widowed
6	Columns 11 and 12 (05) X-0 Score - Number Correct 00 - 99
7	Columns 13 and 14 (05) X-0 Score - Number Wrong 00 - 99
8	Columns 15 and 16 (05) X-0 Score - Number Attempted 00 - 99
9	Columns 17 and 18 (05) $-¢ Score - Number Correct 00 - 99
10	Columns 19 and 20 (05) $-¢ Score - Number Wrong 00 - 99

Variable No.

11 Columns 21 and 22 (05)
$-¢ Score - Number Attempted
00 - 99

12 Columns 23 and 24 (05)
X-0 and $-¢ - Total Score Correct

13 Columns 25 and 26 (03)
SRA Score
00 - 99

14 Columns 27 and 28 (05)
X-0 and $-¢ Total Score Attempted
00 - 99

15 Columns 29 and 30 (05)
Visual Memory Score - Number Correct
00 - 99

16 Columns 31 and 32 (05)
Visual Memory Score - Number Wrong
00 - 99

17 Columns 33 and 34 (05)
Visual Memory Score - Number Attempted
00 - 99

18 Columns 35 and 36 (03)
Matrices Score - Number Correct
00 - 99

19 Columns 37 and 38 (03)
Matrices Score - Number Wrong
00 - 99

20 Columns 39 and 40 (03)
Matrices Score - Number Attempted
00 - 99

21 Column 41 (09)
Health Related Experience
1 - Yes
2 - No

22 Column 42 (01)
Interview Rating - Area #1
1 - 0
2 - 5
3 - 10
4 - 15
5 - 20

Variable No.

23 Column 43 (01)
Interview Rating - Area #2
1 - 0
2 - 5
3 - 10
4 - 15
5 - 20

24 Column 44 (01)
Interview Rating - Area #3
1 - 0
2 - 5
3 - 10
4 - 15
5 - 20

25 Column 45 (01)
Interview Rating - Area #4
1 - 0
2 - 5
3 - 10
4 - 15
5 - 20

26 Columns 46 and 47 (02)
Total Interview Rating
00 - 99

27 Column 48 (01)
Basis of Application
1 - Newspaper
2 - Notice card
3 - Job bulletin
4 - City employee
5 - Friend or relative
6 - State employment
7 - News article
8 - Magazine

28 Column 49 (01)
Previously Employed by City
1 - Yes
2 - No

29 Column 50 (01)
Retired from City
1 - Yes
2 - No.

Variable No.

30 Column 51 (01)
Pass Other Exam
1 - Yes
2 - No

31 Column 52 (01)
Foreign Language
1 - Yes
2 - No

32 Column 53 (01)
Physical Disability
1 - Yes
2 - No

33 Column 54 (01)
Mental Illness
1 - Yes
2 - No

34 Column 55 (01)
Veteran
1 - Yes
2 - No

35 Column 56 (01)
Disability as Veteran
1 - Yes
2 - No

36 Column 57 (01)
Pay Attached Due to Indebtedness During Last Five Years
1 - Yes
2 - No

37 Column 58 (01)
Dismissed from Job
1 - Yes
2 - No

38 Column 59 (01)
Violated Law
1 - Yes
2 - No

39 Column 60 (01)
Contact Present Employer
1 - Yes
2 - No

Variable No.

40 Column 61 (01)
Presently Employed
1 - Yes
2 - No

41 Column 62 (01)
Classification of Last Job
1 - Health related
2 - Unskilled labor
3 - Agriculture
4 - Food service area
5 - Student
6 - Service, non-food
7 - Part time or volunteer

42 Column 63 (01)
Length of Last Job
1 - Less than six months
2 - Six to eleven months
3 - Twelve to twenty-three months
4 - Twenty-four to thirty-five months
5 - More than thirty-five months

43 Column 64 (01)
Money Earned on Last Job
1 - $150 to $199 per month
2 - $200 to $249 per month
3 - $250 to $299 per month
4 - $300 to $349 per month
5 - More than $349 per month
6 - Part time or volunteer

44 Column 65 (01)
Under-Over Employed on Last Job
1 - Underemployed
2 - Reasonable
3 - Overemployed

45 Column 66 (01)
Classification of Next to Last Job
1 - Health (45a)
2 - Unskilled (45b)

46 Column 67
Length of Next to Last Job
Same as column 63

47 Column 68
Money Earned on Next to Last Job
Same as Column 64

Variable

48 Column 69 (01)
Length of time in Denver
1 - Less than six months (48a)
2 - Six to eleven months
3 - Twelve to Twenty-three months
4 - Twenty-four to thirty-five months
5 - Thirty-six months or over (48b)

55 Column 70
1 - Tested, no app. WITHDREW or DID NOT APPEAR
2 - Tested and INTERVIEWED only
3 - Tested, interviewed and LISTED only
4 - Tested, interviewed, listed and CERTIFIED only
5 - Tested, interviewed, listed, certified and VOLUNTARILY REFUSED
6 - Tested, interviewed, listed, certified, HIRED ON FIRST INTERVIEW
7 - Tested, interviewed, listed, certified, HIRED ON SECOND "

56 Column 71
1 - Not hired
2 - Hired and did not show up for work
3 - Still on list
4 - Hired and worked more than 90 days HIGH
5 - Hired and worked more than 90 days STANDARD
6 - Hired and worked more than 90 days LOW
7 - Hired and worked LESS than 90 days WOULD REHIRE
8 - Hired and worked LESS than 90 days WOULD NOT REHIRE

57 Column 72
1 - Tested and WITHDREW
2 - DNA for interview at Career Service
3 - DNQ on interview at Career Service
4 - DNP on interview at Career Service
5 - Not certified
6 - DNA at hospital for interview - eliminated
7 - DNH on first interview at hospital, DNA for second interview
8 - DNH on first or second interviews at hospital
9 - HIRED

49 Column 73 (01)
Quantity Rating
1 - Unsatisfactory
2 - Below Standard
3 - Standard
4 - Above Standard
5 - Outstanding

50 Column 74 (01)
Quality Rating
Same as Column 73

Variable	
51	Column 75 (01) Reporting Habits Same as Column 73
52	Column 76 (01) Overall Rating Same as Column 73
53	Column 77 (01) Supervisory Rating of Ability Same as Column 73
54	Column 78 (01) Supervisory Rating of Performance Same as Column 73

STATE CIVIL SERVICE - CODE FOR SELECTION ANALYSIS

Columns 1, 2 and 3
Identification Number

Column 4
Ethnic Group
1 - White
2 - Negro
3 - Spanish

Column 5
Job Classification
1 - Int. Clk. Typist
2 - Senior Clk. Typist
3 - Int. Clerk Steno.
4 - Senior Clk. Steno.
5 - Clerk Typist
6 - Clerk Steno.
7 - Dic. Mach. Trans.
8 - Res. Sup. Trainee

Variable No.

1 Columns 6 and 7
Age

2 Column 8
Marital Status
1 - Single
2 - Married
3 - Separated
4 - Widowed
5 - Divorced

3 Column 9
Sex
1 - Female
2 - Male

4 Column 10
Length of Residence in Colorado
1 - More than 3 years
2 - Two to three years
3 - One to two years
4 - Six to twelve months
5 - Less than six months

5 Columns 11 and 12
Education (total years)

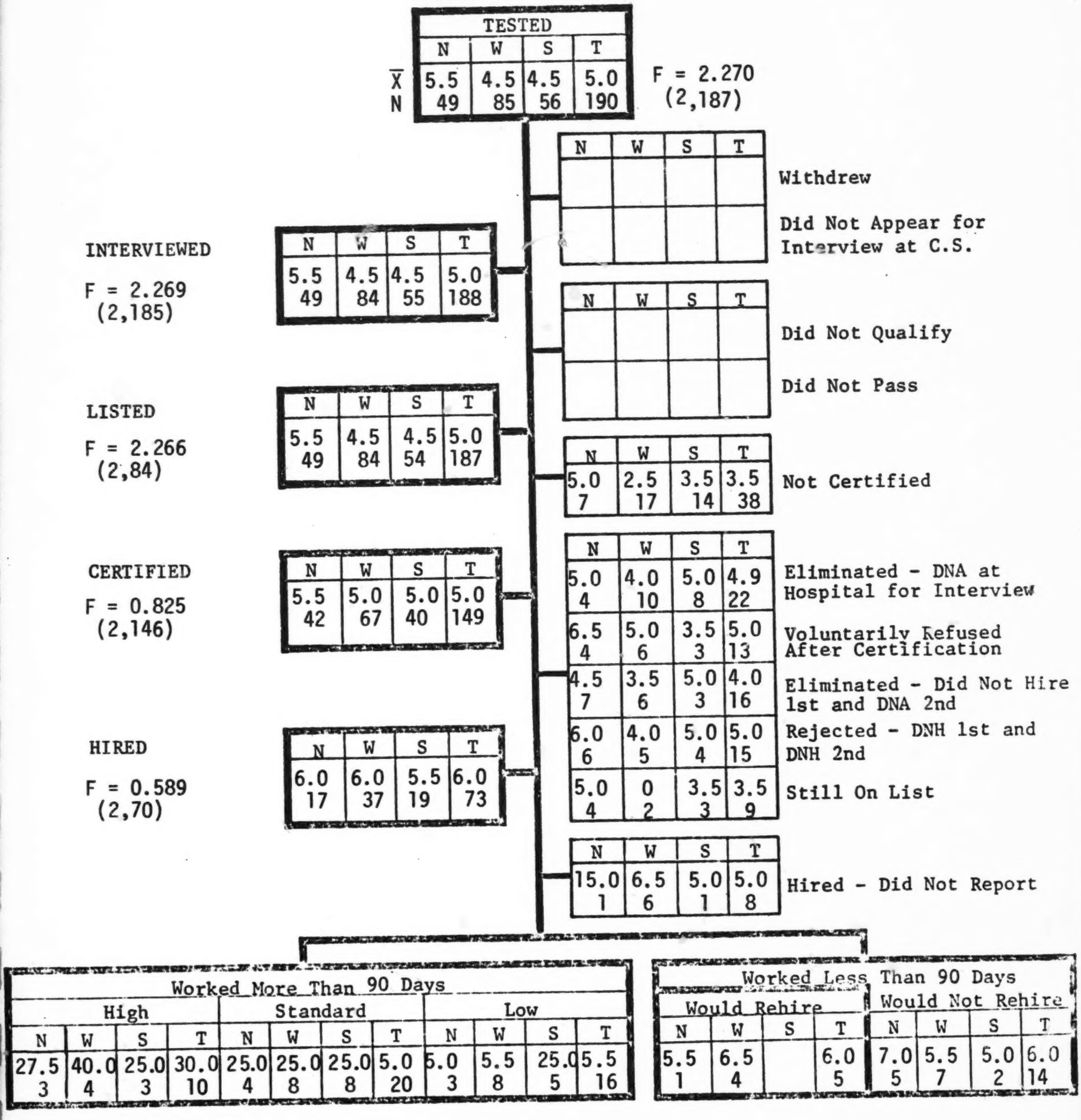
6 Column 13
Length of Last Employment
- same as column 10

7 Column 14
Salary at Last Employment
1 - Part time
2 - $150-199
3 - $200-249
4 - $250-299
5 - $300-349
6 - $350-399
7 - $400-449
8 - Over $449

Variable No.		
8	Columns 15 and 16 Book I-A	
9	Columns 17 and 18 Book I-B	
10	Columns 19, 20, 21 A & B Combined	
11	Columns 22, 23, 24 A & B Weighted	
12	Columns 25 and 26 Book II-A	
13	Columns 27 and 28 Book II-B	
14	Columns 29 and 30 Book II-C	
15	Columns 31 and 32 Book II-E	
16	Columns 33, 34, 35 Total Raw Score	
17	Columns 36 and 37 Converted Score	
18	Columns 38 and 39 Typing	
19	Columns 40 and 41 Steno	
20	Columns 42 and 43 Written	
21	Columns 44 and 45 Oral	
22	Columns 46 and 47 Total Rounded	
23	Columns 48 and 49 X-O Right	
24	Columns 50 and 51 X-O Wrong	
25	Columns 52 and 53 $-¢ Right	
26	Columns 54 and 55 $-¢ Wrong	
27	Columns 56, 57, 58 X-O $-¢ Right	
28	Columns 59 and 60 X-O $-¢ Wrong	
29	Columns 61 and 62 Visual Memory Right	
30	Columns 63 and 64 Visual Memory Wrong	
31	Columns 65 and 66 Matrices Right	
32	Columns 67 and 68 Matrices Wrong	
33	Column 69	Performance
34	Column 70	
35	Column 71	
36	Column 72	

Interview Area One by Selection Stage and Ethnic Group

HOSPITAL ATTENDANT



TESTED

	N	W	S	T
X̄	5.5	4.5	4.5	5.0
N	49	85	56	190

F = 2.270
(2,187)

N	W	S	T	
				Withdrew
				Did Not Appear for Interview at C.S.

INTERVIEWED

F = 2.269
(2,185)

N	W	S	T
5.5	4.5	4.5	5.0
49	84	55	188

N	W	S	T	
				Did Not Qualify
				Did Not Pass

LISTED

F = 2.266
(2,84)

N	W	S	T
5.5	4.5	4.5	5.0
49	84	54	187

N	W	S	T	
5.0 7	2.5 17	3.5 14	3.5 38	Not Certified

CERTIFIED

F = 0.825
(2,146)

N	W	S	T
5.5	5.0	5.0	5.0
42	67	40	149

N	W	S	T	
5.0 4	4.0 10	5.0 8	4.9 22	Eliminated - DNA at Hospital for Interview
6.5 4	5.0 6	3.5 3	5.0 13	Voluntarily Refused After Certification
4.5 7	3.5 6	5.0 3	4.0 16	Eliminated - Did Not Hire 1st and DNA 2nd
6.0 6	4.0 5	5.0 4	5.0 15	Rejected - DNH 1st and DNH 2nd
5.0 4	0 2	3.5 3	3.5 9	Still On List

HIRED

F = 0.589
(2,70)

N	W	S	T
6.0	6.0	5.5	6.0
17	37	19	73

N	W	S	T	
15.0 1	6.5 6	5.0 1	5.0 8	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
27.5	40.0	25.0	30.0	25.0	25.0	25.0	5.0	5.0	5.5	25.0	5.5
3	4	3	10	4	8	8	20	3	8	5	16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
5.5	6.5		6.0	7.0	5.5	5.0	6.0
1	4		5	5	7	2	14

Interview Area Two by Selection Stage and Ethnic Group

HOSPITAL ATTENDANT

TESTED

	N	W	S	T
X̄	6.5	7.0	6.0	6.5
N	49	85	56	190

F = 1.960
(2,187)

INTERVIEWED
F = 2.072
(2,185)

N	W	S	T
6.5 49	7.0 84	6.0 55	6.5 188

N	W	S	T	
				Withdrew
				Did Not Appear for Interview at C.S.

N	W	S	T	
				Did Not Qualify
				Did Not Pass

LISTED
F = 2.347
(2,184)

N	W	S	T
6.5 49	7.0 84	5.5 54	6.5 187

N	W	S	T	
4.5 7	6.0 17	4.5 14	5.0 38	Not Certified

CERTIFIED
F = 1.486
(2,146)

N	W	S	T
7.0 42	7.0 67	6.0 40	7.0 149

N	W	S	T	
5.0 4	6.0 10	6.5 8	6.0 22	Eliminated - DNA at Hospital for Interview
9.0 4	8.5 6	5.0 3	7.5 13	Voluntarily Refused After Certification
5.5 7	5.0 6	5.0 3	5.5 16	Eliminated - Did Not Hire 1st and DNA 2nd
6.5 6	4.0 5	4.0 4	5.0 15	Rejected - DNH 1st and DNH 2nd
5.0 4	2.5 2	3.5 3	4.0 9	Still On List

HIRED
F = 0.954
(2,70)

N	W	S	T
8.0 17	8.5 37	7.5 19	8.0 73

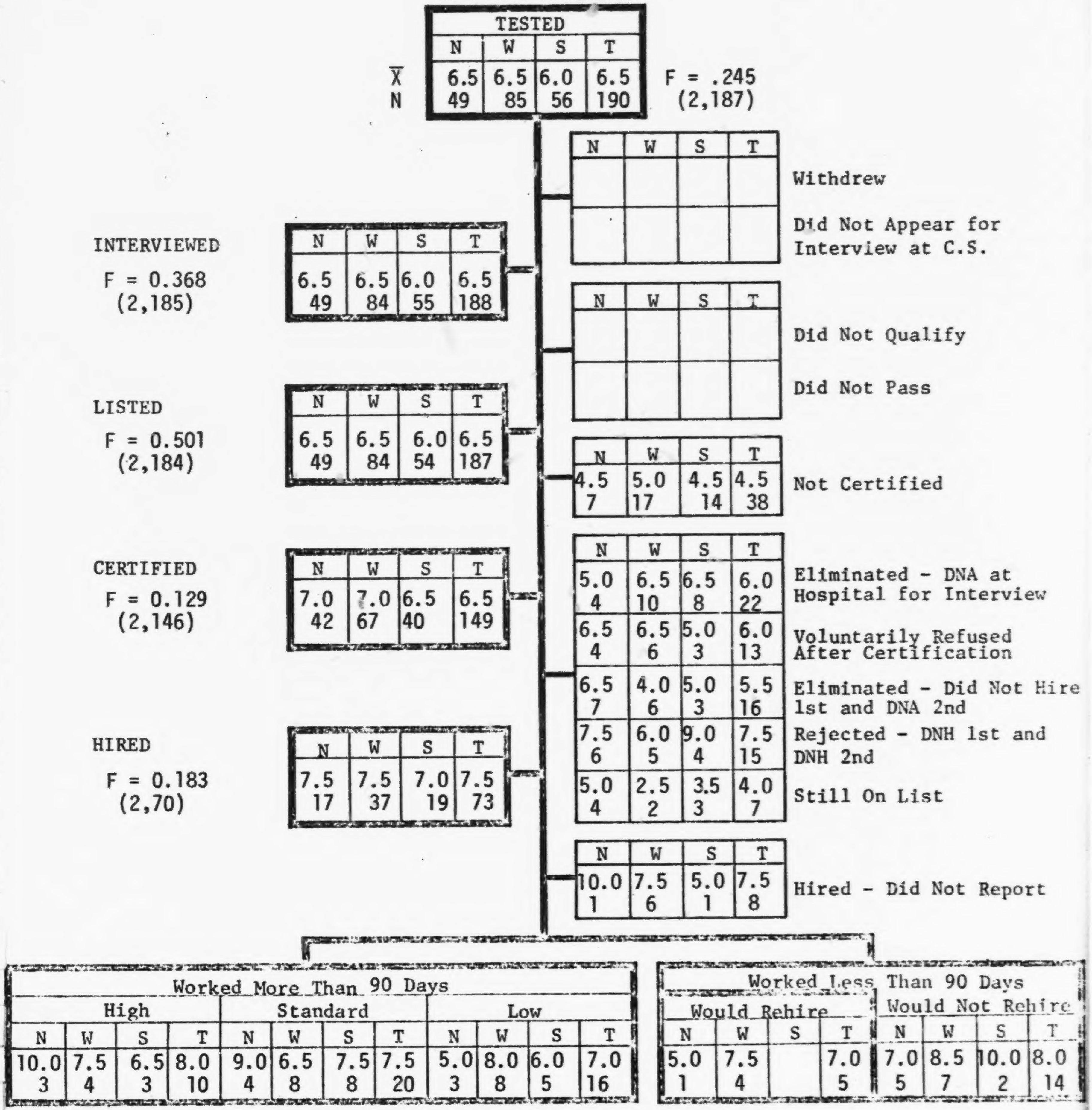
N	W	S	T	
6.0 1	9.0 6	10.0 1	9.0 8	Hired - Did Not Report

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
8.5 3	9.0 4	10.0 3	9.0 10	9.0 4	7.5 8	6.5 8	7.5 20	6.5 3	8.0 8	6.0 5	7.0 16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
10.0 1	9.0 4		9.0 5	8.0 5	8.5 7	10.0 2	8.5 14

Interview Area Three by Selection Stage and Ethnic Group

HOSPITAL ATTENDANT



TESTED

	N	W	S	T
$\overline{X}$	6.5	6.5	6.0	6.5
N	49	85	56	190

F = .245
(2,187)

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.				

INTERVIEWED
F = 0.368
(2,185)

N	W	S	T
6.5 49	6.5 84	6.0 55	6.5 188

	N	W	S	T
Did Not Qualify				
Did Not Pass				

LISTED
F = 0.501
(2,184)

N	W	S	T
6.5 49	6.5 84	6.0 54	6.5 187

	N	W	S	T
Not Certified	4.5 7	5.0 17	4.5 14	4.5 38

CERTIFIED
F = 0.129
(2,146)

N	W	S	T
7.0 42	7.0 67	6.5 40	6.5 149

	N	W	S	T
Eliminated - DNA at Hospital for Interview	5.0 4	6.5 10	6.5 8	6.0 22
Voluntarily Refused After Certification	6.5 4	6.5 6	5.0 3	6.0 13
Eliminated - Did Not Hire 1st and DNA 2nd	6.5 7	4.0 6	5.0 3	5.5 16
Rejected - DNH 1st and DNH 2nd	7.5 6	6.0 5	9.0 4	7.5 15
Still On List	5.0 4	2.5 2	3.5 3	4.0 7

HIRED
F = 0.183
(2,70)

N	W	S	T
7.5 17	7.5 37	7.0 19	7.5 73

	N	W	S	T
Hired - Did Not Report	10.0 1	7.5 6	5.0 1	7.5 8

Worked More Than 90 Days

High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
10.0 3	7.5 4	6.5 3	8.0 10	9.0 4	6.5 8	7.5 8	7.5 20	5.0 3	8.0 8	6.0 5	7.0 16

Worked Less Than 90 Days

Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
5.0 1	7.5 4		7.0 5	7.0 5	8.5 7	10.0 2	8.0 14

Interview Area Four by Selection Stage and Ethnic Group

HOSPITAL ATTENDANT

TESTED

	N	W	S	T
$\overline{X}$	3.5	3.0	3.0	3.0
N	49	85	56	190

F = 0.333 (2,187)

	N	W	S	T
Withdrew				
Did Not Appear for Interview at C.S.				

INTERVIEWED

F = 0.362 (2,185)

N	W	S	T
3.5	3.0	2.5	3.0
49	84	55	188

	N	W	S	T
Did Not Qualify				
Did Not Pass				

LISTED

F = 0.401 (2,184)

N	W	S	T
3.5	3.0	2.5	3.0
49	84	54	187

	N	W	S	T
Not Certified	2.0 7	1.0 17	2.0 14	1.0 38

CERTIFIED

F = 0.264 (2,146)

N	W	S	T
3.5	3.5	3.0	3.5
42	67	40	149

	N	W	S	T
Eliminated - DNA at Hospital for Interview	4.0 4	1.0 10	2.5 8	2.5 22
Voluntarily Refused After Certification	7.5 4	2.5 6	3.5 3	4.0 13
Eliminated - Did Not Hire 1st and DNA 2nd	2.0 7	3.5 6	3.5 3	3.0 16
Rejected - DNH 1st and DNH 2nd	5.0 6	1.0 5	2.5 4	3.0 15
Still On List	2.5 4	5.0 2	1.0 3	3.0 9

HIRED

F = 0.522 (2,70)

N	W	S	T
5.0	5.0	5.0	4.0
17	37	19	73

	N	W	S	T
Hired - Did Not Report	5.0 1	10.0 6	5.0 1	9.0 8

Worked More Than 90 Days											
High				Standard				Low			
N	W	S	T	N	W	S	T	N	W	S	T
0	5.0	5.0	1.7	2.3	1.5	1.8	1.8	1.0	1.5	1.2	1.3
3	4	3	10	4	8	8	20	3	8	5	16

Worked Less Than 90 Days							
Would Rehire				Would Not Rehire			
N	W	S	T	N	W	S	T
1.0	5.0		1.8	5.0	1.9	2.0	1.9
1	4		5	5	7	2	14

Table 21

Standard Deviations for Selected Characteristics of Tested and Hired Applicants by Ethnic Group

HOSPITAL ATTENDANT

	Tested			Hired		
Characteristic	Negro	White	Spanish Surname	Negro	White	Spanish Surname
X-O Score	12.2	10.8	10.3	8.7	9.2	11.3
$-¢ Score	6.2	5.0	5.4	4.2	3.5	6.4
X-O $-¢ Score	17.3	14.3	14.5	11.4	10.4	16.9
SRA Score	10.7	8.6	7.3	12.1	6.9	8.6
Visual Memory	15.2	16.2	15.2	9.6	15.7	14.8
Matrices	9.3	10.7	10.3	6.7	10.9	11.2
Total Interview	9.0	9.4	8.1	9.5	8.9	6.7
Quantity of Work				.6	.5	.7
Quality of Work				.4	.4	.6
Reporting Habits				.5	.3	.5
Overall Rating				.6	.4	.7
Ability Rating				1.2	1.1	1.0
Performance Rating				1.3	1.1	.9